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THE MARCH OF EVENTS

FEW UNBIASED political observers believed that Governor Smith could be elected. Fewer still, probably, believed that Mr. Hoover would be elected by such an overwhelming vote. The astounding feature of the election was the remarkable increase in the number of ballots cast and the large fraction of this increase that went to Mr. Hoover. The returns defy the usual methods of political analysis. Mr. Hoover might have won the campaign on his farm policy, his tariff policy, his power policy, or the showing of prosperity under a Republican régime.

But these, the traditional "issues," were not what brought the avalanche down on Governor Smith's head. Mr. Hoover had, first, the benefit of a reputation for able and disinterested service to his fellows. If as food administrator he had disciplined the farmers they had forgotten it. They remembered Belgium. They remembered the man who threw himself so warmheartedly into the difficult business of flood relief a year and a half ago. Sentiment like this cannot be measured in advance. The wiseacres who have sat up nights over every contest since the days of Tilden and Hayes knew not much more than did the rest of us.

Mr. Hoover had, in the second place, the advantage of having taken the popular side of the argument over prohibition. Neither candidate could have done much about prohibition. Both had promised to enforce the existing law as long as it remained a law. There was not the faintest prospect of a repeal of the Eighteenth Amendment. But Mr. Hoover was obviously a dry and Governor Smith even more obviously a wet. The election was to that extent a referendum on national wetness and dryness. There is no mistaking the result. Prohibition won. The "noble experiment" has made few converts in New York, Chicago, or New Orleans, but it is solidly entrenched in the Middle and Far West and in the rural South.

Finally, there entered the question of religious prejudice. This was brought in by both sides, although it is only fair to say that it was not Governor Smith's supporters who made the most noise about it. It must be conceded by any careful student of the campaign and of the election that Mr. Hoover won many votes because of his opponent's religion. We have had Roman Catholic Governors, Generals, judges, Cabinet members, and Chief Justices, but in the opinion of many tens of thousands of our citizens we are not ready for a Catholic President. The work of the Ku Klux Klan was visible. Though the organization itself was moribund its tail, like the traditional snake's, wiggled till sundown. The cheerful view of this phase of the campaign is that both candidates did their best to spread the doctrine

of tolerance, and that it was not religion that turned the issue. Governor Smith would have lost had he been a Unitarian, like Taft, or a Presbyterian, like Wilson.

Why, fundamentally, was he beaten? The answer is not entirely personal. It is, in large measure, to be found in the fact that his party remained and remains substantially a party in opposition. It offered this year a candidate of great achievement, of high character, and of sincere liberalism. It did not give the voter a choice between two political philosophies. Except for prohibition, which was made an issue by Governor Smith after his party had sidestepped it, the Democracy of 1928 was little more than a diluted Republicanism. The party is in confusion; it is losing its hold even on the formerly solid South. The time is approaching when it must either disintegrate and yield to a new major party or effect a decisive reorganization. Perhaps that will be Governor Smith's task during the next four years.

Mr. Hoover will come to the Presidency with an equipment and an opportunity such as few incumbents of that high office have possessed. He will be an engineering executive for a nation and a period that demands supreme engineers. His countrymen of all parties have confidence in his character and ability. He will enter the White House with a priceless fund of good-will behind him.

The Cup that Kills

BEFORE THE DAYS of prohibition any citizen who cared to do so could drink himself to death, and many citizens did. But, except in the areas where state or local laws forbade the sale of liquor, the drinks were free from the grosser poisons. Varnish, horse liniment, and pain killer, not to mention embalming fluid and various magic cleansers, sometimes slid down thirsty throats, but they could not be called national beverages. People who got alcoholism got it by drinking too much alcohol. Obviously, it was the results of this practice that led to prohibition.

Without debating at this moment the merits of prohibition we may point out that this noble experiment, as Mr. Hoover called it, or this vicious assault upon personal liberty, as some of Mr. Hoover's opponents considered it, has brought one evil that did not exist before. It has introduced wholesale poisoning as a means of enforcing the law. It has made the Federal Government a kind of Borgia. During the first eight months of the present year 518 persons died of alcoholic poisoning in New York City alone. How many more were temporarily or permanently injured in health, or what the statistics would be for the entire country can only be guessed at.

Chief Medical Examiner Norris of New York City believes that most of the liquor sold there is poisonous. The most dangerous liquors are the cheapest. Those who can afford to pay bootleggers for beverages "right off the boat" are comparatively safe, though they may be having trouble with their livers in a few years if they keep on. But the speakeasies along the waterfronts, in the tenement districts, and where unskilled labor congregates are deadly.

The poisons that our illicit liquor contains are obviously not placed there with malicious intent by the saloon keeper. He may care less for his patrons' health than for his own pocketbook, but there is no doubt that he would sell safe drinks if he could get them and could afford to do so. New York City has attacked the problem in a manner that may be typical of the great metropolis. Its police have been instructed to arrest all proprietors of speakeasies whose commodities are violently dangerous to health. The others, it is inferred, will be tolerated.

This means, in effect, that the well-to-do can continue to drink, but that the thirsty souls who have only a few dimes to spend will have to stay thirsty. That is to say, this will be the case if New York's qualified prohibition regulations actually work. It is more likely that the liquor sold will merely be distributed more furtively. It will continue to be poisonous. It will be poisonous as long as it is the law and policy of the Federal Government to denature alcohol released for commercial uses.

The object of denaturing is to make it impossible to use the alcohol so treated as a beverage. When this succeeds there can be no complaint except from those who dislike to see good alcohol ruined. When it fails the government commits what in a private citizen would be considered manslaughter. Some prohibitionists have justified this result on the ground that it would not occur if every one obeyed the law. But is the violation of the prohibition law that the drinker commits deserving of the punishment that poisoned liquor inflicts?

If the practice of denaturing liquor or the sale of wood alcohol for commercial use were discontinued the enforcement of prohibition would undoubtedly be rendered far more difficult. But in the end the tragedies resulting from poisoned liquor may work against the very purpose of prohibition. Certainly, they are responsible in some quarters for a bitter hostility to the law that might not otherwise be felt.

Forty Million Listeners

IF THE RADIO and the international telephone have their surpassing importance, so, too, increasingly, has the art and science of broadcasting within our own borders. Already the great announcers compete for fame with the stars of what used to be called the silent drama. The slightest intonations of their voices, their favorite jokes, the artful way in which they almost but not quite become speechless with emotion when Battling McGinnis taps the Pittsburgh Pounder on the button or the Army makes a goal are known to millions. We can even guess how many millions. If we are to take the estimates of the National Broadcasting Company, recently made public, there will be, on January 1st, 11,032,855 receiving sets in the United States, of which four fifths will be in operation any night when the static is not too bad.

About one third of the population—or, according to the meticulous calculation of Dr. Daniel Starch, 41,453,496 souls—is included among the families that own sets, and something more than 30,000,000 listen every day. Hook up a President or some other national celebrity, and the whole 41,453,496 may be on hand at once. Curiously enough, there are large variations in the popularity of the radio in the different sections. New England comes first, with 43.85 per cent. of its population hanging around the loudspeaker. The South Atlantic and South Central states are lowest, with 23.95 and 20.60 per cent. respectively. Perhaps this is because the Negro population is less dependent than are its white neighbors on other people's music.

Yet, strange as it may sometimes seem, the effect of the radio in the long run will probably be to raise the quality of musical appreciation everywhere. Where one musician used to reach at best a few hundred listeners he can now, if he "goes on the air," make tens of thousands lend their ears. The effect ought to be a demand for fewer and better musicians. Incidentally, a similar result may follow from the "canned music" of the speaking—and sometimes shrieking — motion picture film.

The National Broadcasting Company, coöperating with the National Music League, has announced a plan to give young musicians an opportunity to make free radio débuts. At present a New York début costs from $600 to $1,000, and the beginning performer is lucky if he receives a paragraph in the metropolitan press. The new scheme is to have the débuts made in groups of three—perhaps a singer, a violinist, and a pianist will be on the same program. The candidates are to be chosen by a series of elimination tests, so that none but the most highly gifted will reach the final stage.

The events will have enough importance to attract the leading critics to the audition room, and at the same time the effect of the performance on a vast popular audience can be tried out. It seems to be true that some voices that may carry well in a concert hall do not go so well over the radio. Nor is instrumental music often perfectly received through the air. But, all things considered, the tests will be

fair, and they will meet the democratic requirement of a career open to talent.

It is a common superstition that the age of machinery must necessarily be an age that is tongue-tied in the arts. Obviously, machinery of itself cannot raise the level of artistic or musical ability. But it may serve the same purpose, in the case of music, at least, if it broadens the audience for the gifted individual. And toward that desirable end the radio, like its predecessor and contemporary the phonograph, generously contributes.

Aërial Navies

THE ART of warfare, according to those who maintain that warfare is an art, has always been characterized by an attempt to attain a balance between the offensive and the defensive facilities. Heavier armor has been answered by sharper spears. When the offensive became too perfect, as in the case of Alexander and his Macedonian phalanx, world conquerors appeared. When the defensive had the upper hand, as was true during most of the World War, a deadlock resulted. It might be better for the peace of the world if the advantage always rested with the defense. There were months in 1917 when it seemed that this might be the final outcome, and that national frontiers might be made permanent and impregnable by lines of trenches. But the airplane has upset these calculations.

Both the British and the French air forces have recently been conducting manœuvers to determine how easy it would be to defend their capitals from an assault by hostile airplanes. In each instance it was demonstrated, according to the military authorities, that the enemy could break through and inflict enormous damage. Much of London was theoretically bombed and gassed. Paris theoretically suffered almost as dreadful a fate. The general staff that was directing the work of defense was discovered by the invaders and "destroyed" by machine-gun fire, and the city itself was exposed to a bombardment that, had it been real instead of on paper, would have been ten times worse than anything the Germans were able to inflict during the late conflict.

It has been asserted, both in Great Britain and in France, that these maneuvers have a political significance: they may be linked up with the Anglo-French understanding, and they may be a preliminary to a demand for larger appropriations for aviation forces. But there is not much disposition to question the disquieting facts that they reveal. Three-dimensional fighting has changed the whole character of warfare. Formerly an army could reach its objective only by capturing, dispersing, or disabling the forces that stood in the way. To leave an armed enemy in the rear was fatal. The nearest thing to the modern air attack was the cavalry raid, the scope of which was always limited. The machine gun would have made cavalry of small importance, even though the airplane had not.

But the airplane seems to be able to break through a hostile line almost at will. Not only can it outflank its enemies but also it can dive under them or rise above them. It can hide behind clouds and sneak through under cover of darkness. It is not possible to assemble enough defense airplanes to give complete protection to a threatened area. The mastery of the air shifts from hour to hour, almost from moment to moment.

If a war were to occur between France and Great Britain, French airplanes could bomb London and British airplanes could bomb Paris without ever fighting a decisive battle. There would be enormous and futile destruction of civilian life and property. A general war would turn Europe into a madhouse, in which the participants would be able to devastate without, perhaps, being able to occupy. Ultimately the ingenuity that produced the military airplane may be able to devise an effective defense against it. It would be rash, at any rate, for a layman to say that such would not be the case. But even a layman, that poor worm whom the experts tread under foot, can understand—and shudder at—the implications of the present situation.

Fortunately for our own peace of mind America has comparatively little to fear from an attack by air. We need not begin to worry until airplanes can cross the Atlantic from East to West with regularity and arrive with at least a few hundred pounds of disposable freight. However, we shall do well not to trust too long to the gods who protect Americans and children. We need to adapt our own air defenses to our reasonable requirements. But, above all, as the nation least exposed, we can afford to take the lead in working for peace. The bombing airplane is an effective argument for making and keeping the anti-war treaties.

Twenty-five Years After

THOUGH the airplane may arouse disquietude as a military weapon its triumphs as a means of peaceful travel and communication will probably go far to reduce the danger of war. This year we celebrate the twenty-fifth anniversary of the first successful flight, made by the Wright brothers, in a heavier-than-air machine. The twenty-five years since that momentous occasion have seen flights growing steadily longer, engines more reliable, pilots more skillful, and knowledge of conditions in the air more nearly complete. A new science of aëro-dynamics has developed. It is interesting to remember that the Wrights achieved their first success by going counter to what had been the accepted laws as to the movements of plane surfaces in the air.

Long-distance flights have become commonplace. Fatalities occur as a rule only when difficult feats are attempted or when the known rules of safety are disregarded. We may set forth on an overland tour with reasonable certainty that our chances of arriving alive and in good condition are not appreciably less by air than by railway train or by automobile.

The future will probably give us even greater security—particularly devices enabling even timid passengers to descend by parachutes from disabled planes, devices that will permit a plane to land within a small space, and some means of reducing the danger of fire. We may look for the development of more landing fields and the organization of passenger lines paralleling the main lines of railroad. This indeed is already going forward rapidly, as we have noted in a recent issue. Finally, and by slow degrees, the nation will grow more "air-minded."

Whether the ordinary individual can wholly overcome his fear of heights is a question. Some of us, to the end of time, will be unable to stand calmly on the brink of a hundred-foot precipice. Some of us will always have qualms when our plane drops into an air pocket and passengers and baggage suddenly mount toward the ceiling. But there is no doubt that the fear of the air can be greatly reduced in most of us and completely eliminated in some of us. Especially will this be true if we—and by "we" in this connection is meant, unfortunately, not the present adult generation but the one to come—can be accustomed to air travel during our impressionable years. The burnt child may dread the fire, but the air-traveled child will not dread the air.

Meanwhile it is well to remember that if the Wright brothers and the other pioneer inventors and pilots who had a part in giving mankind wings had not been willing to entrust their lives to the unknown there would have been no aviation industry and no anniversary to celebrate.

Honoring Mr. Edison

NO ONE will question that Thomas Alva Edison richly deserved the unusual honor that was conferred upon him several weeks ago when a Presidential speech praising his achievements was broadcast through forty-eight states. "In the space of a single lifetime," as Secretary Mellon said in adding his voice to the President's, "he has changed the conditions under which men live, and, more than any one else now living, has helped to bring about a new social order based upon the achievements of modern science."

Mr. Edison's inventions are so numer-

ous that it is difficult to assess their practical effects upon our lives. But his important gifts, we may safely say, were music and light—the phonograph and the incandescent bulb. If these sometimes assume the forms of noise and glare it is hardly Mr. Edison's fault. He has been probably the most thoroughgoing inventor who ever lived. He was never content with producing a device—he had to fit every invention into the existing social, economic, and technological scheme.

It has been well said of him that when he produced the electric light he invented an industry. He began by mastering the technique of illumination of gas. He worked out every detail of producing and distributing the electric current, down to the last plug and fuse box. Ten years of heroic labor were necessary before the ideal filament was found, but in every essential respect Edison brought the electric light into maturity at a bound. The experiments were made not upon the investing and consuming public but in the laboratory.

In recent years there has been a tendency to cry down inventors, partly because they were so extravagantly cried up ten or twenty years ago and partly because with all their gifts we do not seem to ourselves to be much better or happier than our ancestors were. It sometimes appears that they have done little except enable us to run around a little more rapidly in our squirrel cage of a civilization. But the electric light, to take Mr. Edison's supreme contribution, has done more than add to the speed or intensity of life. It has done utilitarian things like saving labor and conserving eyesight. It has done beautiful things, as the illumination schemes of modern skyscrapers and the achievements of the stage-designers testify.

But it has a deeper significance. The spreading of light is symbolical of the best of modern life. Our ancestors, in caves or huts, were once prisoners of the dark. Out of the dark came the grotesque superstitions and fears that weighed them down and made their lives wretched. But our age is conquering the darkness, both physical and mental. The "night life" of our cities is still mentioned by conservative-minded people with a tone of reproach. But the better lighting of streets, homes, and theaters implies cultural opportunities that did not exist when Mr. Edison was a boy. Once the "night life" meant pure viciousness. Now it means also a real extension of civilization. Matthew Arnold spoke with authority when he described civilization as "sweetness and light."

We have had ages of stone, of copper, of iron, of steel. It is no exaggeration to speak of the present as the age of light. Light is being turned on all things—on the remote stars, on the atom, on the thoughts of men. The wavering torch, the flickering candle, remain as poetic images, but the dark world in which they burned has vanished forever. One would not call Mr. Edison a poet, though he knows how to express himself briefly and well when occasion arises. But his accomplishment has a poetic breadth that catches the imagination.

For most Americans he is a kindly old man to whom the reporters go occasionally for oracular statements and to whom merited honors are paid upon birthdays and anniversaries. That is the rôle he likes best. But the men of the older civilizations would have made him a god, or glorified him as they did Prometheus. The difference between Mr. Edison and Prometheus, however, is that Mr. Edison, unlike his ancient prototype, not only stole fire from Heaven but, in the modern vernacular, "got away with it."

A Fruitful Agreement

THE AMERICAN REPLY to the British and French suggestions for a naval agreement is an excellent state paper. It is clear, forceful, and conclusive. While there is no reason to suppose that it has "broken up the Anglo-French entente," as has been often stated, there is no doubt but that it brought to an abrupt end the scheme of the British Admiralty to put the United States in a position where it must accept limitation on the British terms or appear

as an opponent to disarmament. It not only frustrated this naïve scheme, but it did so in such a way as to receive the very general approval of public opinion in all countries, including Great Britain itself.

The note is a credit to Secretary Kellogg and his associates, although it can hardly be characterized as a "great diplomatic victory." There is no particular glory in knocking a man out when he is already down, even though the exigencies of diplomacy may sometimes require it. Downing Street had already placed itself *hors de combat* by its own misdirected effort.

There has been some discussion as to whether England or France was at the bottom of this scheme. The champions of each have tried to make it appear that the other was responsible for dragging their protégé into an unhappy maneuver, and the series of notes published in France begins with one from London. It makes little difference. There was stupidity enough to go around. It may be pointed out, however, that the Quai d'Orsay has come in for little criticism, and that Britain's approval of the French thesis that trained reserves shall not be counted as soldiers, still stands. Downing Street, on the other hand, has been deluged with scornful criticism, not the least of which has come from papers of all political complexions in its own country.

Herein is the silver lining to the cloud with which the Anglo-French agreement for a time obscured the light of international good will. Not the least interesting phenomenon in post-war politics has been the increased sensitiveness of British public opinion to the maneuvers of British diplomacy. Before the war the Foreign Office carried on in esoteric secrecy and led all but a small portion of British opinion around by the nose. The public, however, seems to have taken the lesson of 1914-18 to heart. It not only insists on knowing what Downing Street is doing, but, what is more auspicious, it insists that Downing Street shall not get the country entangled in any more international agreements such as the one that contributed to the last catastrophe.

More especially British public opinion seems to have made up its mind that Great Britain's interest demands the best relations with the United States. The way in which British sentiment found such forceful expression as to compel the reluctant Conservative Ministry to sign the Kellogg Pact, was a striking example of this new turn of affairs. No less striking has been the British reaction to the more recent moves of the Foreign Office under the promptings of the Admiralty. For some centuries the basic dogma of the British Admiralty has been that any great naval power is Britain's enemy. Heretofore the Admiralty has been able to carry public opinion with it on this point and has always shaped British diplomacy toward a combination that would enable England ultimately to crush the rival naval power. Holland, France, and Germany in turn have gone down before the combined weight of British diplomacy and British guns. The United States is obviously next on the Admiralty list. And the naval experts have started out in traditional fashion to circumvent American naval power.

How dogma imposes on common sense is well illustrated by the puerile proposals that were made to Washington. It was calmly suggested that a strict limitation be placed upon 10,000-ton cruisers, the type best suited to American needs, while the construction of 6,000-ton cruisers, the type that Britain wants, should not be limited at all. It might be concluded from the nature of these proposals that the Admiralty had never heard of the Three-Power Naval Conference at Geneva. Either it pigeon-holed such information as it had, or it counted upon the opponents of naval construction in the United States to force Washington to accept the humiliation of a British straight-jacket for the American Navy.

Its calculations went sadly astray. American opinion has strongly approved the rejection of the British proposals, while British opinion has been even more outspoken in its condemnation of the action of the British Government. The net result up to the the present time has been both a vindication of the fairness of the American position in regard to naval limitation

and a clear discrediting of the back-stairs diplomatic methods by which it was attempted to circumvent that position.

Super-Days And Simple Ways

THE EVER-GROWING number of commentaries on the early movements of armies in the beginning of the World War disclose one supreme fact above all others —that the contending forces were far too large for their creators to handle efficiently. For years the Germans had labored over their battle plans, but once the forces started in movement no mind or no system of minds could keep pace with the unexpected developments, and useless slaughter and ultimate disaster resulted. So, too, on the French side the armies were so vast that no one mind could direct their movements with great efficiency.

In all this blundering futility there is a lesson for modern man if he will only perceive it, a lesson not only in war but also in peace—and in it there is a lesson particularly for us in this swiftly growing America. Europe, with all her culture and her philosophies, could create a vast machine that she had not mind enough to manage. Are we in these New United States creating a machine of another kind that we have not the mind to manage? We have created prodigious factories for the making of things by the millions in mass production. Into these mass productive facilities we have drawn billions in money and millions in hands, and our philosophy is that each year's production must be larger than the last until the end of time.

Not only in the midst of our great prosperity have we invented the modern luxuries and conveniences that are conducive to slothful thinking and slothful living, but in the manufacture of those luxuries we have supplied to most of our citizens means not only for a comfortable living but also for those pleasant diversions that are not necessary to life or even to happiness but that prevent all seekers of comfort alone from aspiring to higher and perhaps more intangible self-improvement. We have flattered and pampered the body but have given the mind only pleasant anodynes.

Clearly, then, the problem is in education—in education not only for the improvement of those who are satisfied merely with perfect brawn, but education that will be sure to develop the superminds that we need to control this vast machine built by our feverish hands. And we need more—we need a new philosophy that will teach that a constructive thought is as useful as a perfect machine.

The Conquering Automobile

IN 1895 there were 300 registered automobiles in the United States. By 1915 the registration was about 2,500,000, and some manufacturers were gravely discussing whether or not the saturation point had been reached. To-day, as President C. F. Kettering of the General Motors Research Corporation pointed out in a recent speech, the rate of production is 3,500,000 a year, or about 1,000,000 more than the total registration thirteen years ago.

For the purchase of these cars we pay out $4,000,000,000 a year, or more than $33 for every inhabitant—man, woman, and child. The costs of operation bring the total to a still more impressive figure. The automobile industry uses 16 per cent. of the nation's steel, 85 per cent. of the rubber, and 85 per cent. of the plate glass. Barring a sudden change in technique the industry is probably stabilized. The annual sale of cars will remain approximately stationary in proportion to population.

But the automobile has still to be put to its full use. Mr. Kettering stated that cars are produced to-day that are capable of safe speeds of sixty and even seventy-five miles an hour in the hands of average drivers, provided—and the proviso is of course a large one—they had a clear road. In Mr. Kettering's opinion express highways, reserved for high speed traffic, are bound to come. The idea is not a new one, but it is of increasing importance. The

principal argument against it is the expense, especially in congested territories where land is costly.

Yet it is in just such territories that the swift movement of traffic is most profitable, and even most essential. The Regional Plan Committee of New York City has estimated the loss resulting from traffic congestion at $1,000,000 a day. This occurs chiefly in city streets. Yet it could certainly be relieved if not eliminated by express highways leading out from the congested centers.

City planners and regional planners are concentrating upon this problem. It is in this field, rather than in improvements in machinery, that we may look for the next great developments in transit and transportation. Our conceptions of highways are still antiquated. They need to be brought up to date.

Voices Across the Sea

THERE IS sometimes some question as to how much modern means of communication do to make us wiser, better, or happier. We arrive more quickly than our ancestors used to, but it is by no means certain that we make any more profitable use of our time after we get there. The telephone and the radio have made it at least theoretically possible for the entire human race to listen to a single speaker at the same moment, but this does not of itself guarantee that any speaker will have anything to say that justifies so much attention.

But in the field of international relations the new ability of peoples and governments to talk directly with one another does seem to be of immense importance. The other day President Coolidge and King Alfonso of Spain exchanged greetings over the new telephone connection that links Washington and New York with Madrid. Let us assume that such a conversation had been possible on the eve of the Spanish-American War, when Spain was willing to concede practically everything that the United States was in a mood to demand. It is hard to believe that the war could have taken place. The cable and telegraph did indeed exist. But cable and telegraph messages take on a tone of finality and formality, if only because they are written down and become matters of record. They leave out the inspiration of the moment and the nuances of the human voice. There is no glow about them. They inspire stiltedness in the most warm-hearted.

But, as the progress of invention in this field clearly indicates, the speaking radio will soon be supplemented by a practicable seeing radio. We shall turn a switch and a man in Spain, in France, in Germany, in China even, will be as visible to us as though he were in the same room. Carry the possibility a little further. Groups of people as well as individuals may be brought together by television. Plenipotentiaries may meet without crossing an ocean or a boundary. An international conference may be held with each member remaining in his own capital.

Obviously, no machinery of this sort can be of much use if a nation or a government is already bent on resorting to war. But a study of international crises seems to indicate that there is more of the accidental in wars than we used to suppose. It is only rarely that governments deliberately conspire to shed blood. It may be doubted that either the German or the Russian governments, who were clearly the worst offenders in 1914, sought war as the only desirable outcome of their policies. What seems to have happened is that they were edged toward war by their refusal to yield during any of the smaller crises that preceded the great crisis. Their precipitate action during the final stages of the negotiations was largely due to their belief that war had already become inevitable.

Delays in communication certainly had much to do with bringing about this situation. In the end "honor," consistency, whatever names one cares to give to the excuses that statesmen find when they reach an apparent impasse, forced the issue. This is not to say that Germany did not desire to dominate Europe, or that Russia did not hope to control the Balkans and to seize Constantinople. But a full

and frank discussion, bringing the responsible statesmen face to face, might have exposed the folly of these ambitions. It certainly would have mobilized popular opinion in favor of peace, for the will toward war thrives upon ignorance and misunderstanding.

If we believe in the theory of the anti-war treaties we must believe in the ultimate reasonableness of human nature, and we must welcome hopefully any system or device that gives reason an opportunity to exert itself. Make diplomacy public, bring the governments of the world instantly into the same council room in time of emergency, and jingoism will no longer be able to work its will unhampered behind national boundaries. The inventors of the radio may in the end do more for peace than all the peace societies.

Reviving British Coal

NOT THE LEAST of the post-war difficulties of England was the fact that during the war period oil supplanted coal as the world's most sought-after fuel. The British Empire was in a sense built upon coal. The British domination of the seas reached its greatest effectiveness when coal-burning steamships superseded sailing vessels. England has enormous deposits of coal lying close to the seaboard, where they are easily accessible to British shipping.

Not only was this an advantage in securing fuel for their own use, but it afforded an easily adjusted and always profitable cargo for outgoing British ships. England's great demand has been for foodstuffs and raw materials—both bulky articles. Her exports have been for the most part finished goods, which take much less space. Coal could always be used to complete the ship's load. It could be sold in almost any port of the world or deposited in any of the British coaling stations scattered along the world's trade routes.

The gasoline motor had already started a revolution in motive power when the war gave it an enormous impetus. At the same time, the perfection of the Diesel motor, suitable for use in large ships, dealt another blow to the prestige of steam. The two together relegated coal to second rank as a world fuel. This was a serious matter for England because, although she is rich in coal, she possesses no oil deposits whatever. Her industrial statesmen made a determined effort after the war to secure control of the world's oil reserves and would have succeeded but for the opposition of the United States. While the battle for the control of these reserves still goes on, it has reached something like a state of equilibrium.

Britain is therefore turning her attention once more to her coal resources. At a World Fuel Conference held in London, out of 175 papers presented, two thirds dealt with the possibilities of coal. Perhaps the most interesting subject was that of low temperature carbonization. Extensive experiments that have been carried on near Newcastle have resulted in the production from a ton of coal, worth $3, of various products—including "motor spirit," parafine, creosote, and pitch—of a total value of about $4.75. The cost of production in the experimental plant was approximately $1 a ton. It is figured that on a commercial scale this cost could be reduced to a little more than 25 cents a ton, leaving a net increase of nearly 50 per cent. in the value of the coal used. Additional savings are expected from the more efficient use of coal under these circumstances.

Already English billboards display exhortations to use motor spirit made from British coal. Doubtless this will be followed by other efforts to revive the waning industry of the British coal fields.

Constitutionalism in Italy

SINCE the Fascist party seized the supreme power in Italy, one step after another has been taken to "constitutionalize" the Fascist régime. It could not be set into the framework of the old constitution without either a surrender of power or a fatal concession to democracy. Fas-

cism is inherently revolutionary. Revolutions do not proceed according to constitutions; they cut across them.

If Fascism could not go to the constitution, the constitution must come to Fascism. So the Italian Parliament has been reduced to an appointive, advisory, and ratifying body. Popular elections have been suppressed as incompatible with the spirit of Fascism. All power in the country and the regulation of all matters down to the minutest detail have been centered in the hands of the Fascist chief. All opposition has been firmly suppressed or driven from the country. The dictatorship has been consolidated, and its position is practically unassailable—so long, at least, as Mussolini remains in charge.

It remained to give the new régime the added respectability of constitutionality. Dictatorship in practice neither needs nor heeds constitutions. But Mussolini has clothed himself, as it were, in an aura of that glorious and intangible thing known as Fascism. Fascism needs a constitution even though Mussolini does not.

This concession to the forms of party action runs through the whole Mussolinian scheme. In the government, instead of frankly assuming the position of dictator, Mussolini prefers to assign himself as chief of seven different ministries. In the party, it is not Mussolini but the Grand Council that is supreme. Mussolini merely appoints and dismisses members of the Grand Council as he sees fit. However, as Mussolini chooses to have his party side superior to his governmental side, it is this Grand Council that has been selected as the supreme organ of the Fascist state.

At a series of meetings held during the third week in September, the Grand Council went solemnly through the forms of debate on a proposal to write its own supremacy into the Italian Constitution. It took several night sessions for it to convice itself, but the final decision was unanimously in its favor. There has been submitted to Parliament, where a like favorable vote may be counted upon, a project of law that contains the following provisions:

The Fascist Grand Council is to be the supreme organ of the state.

It will be made up of a score of officials, all of whom are apointed directly or indirectly by the Chief of the government.

The Chief of the government may call in any other men he likes as members when occasion demands.

The discussions of the Council are secret and no member can be arrested or disciplined without permission of the Council.

The Council will deliberate (not decide) on the names of Deputies who are to be elected to Parliament; on the acts and officers of the Fascist party; on any question of constitutional character; on the succession to the throne and the powers of the king; on its own membership and that of the Senate and Chamber of Deputies; on relations between the State and the Catholic Church; on international treaties; and on the acquisition of territory.

Lastly, the Grand Council is to keep a list of names of men to present to the King from which he is to appoint a new Chief of the government in case of a vacancy in that high office.

Thus are Fascism and the Italian state completely fused. This, at least, is the Fascist characterization, though the reality is more like the lying down together of the lion and the lamb. Fascism has long since imposed itself *de facto* on the Italian state. It has now imposed itself *de jure*.

Fascist Sophistry

IT IS NECESSARY to be thoroughly imbued with the Fascist sophistry in order to see in this arrangement anything but an elaborate cloaking of personal dictatorship in fantastic political vestments. So long as the final word on every matter in Italy rests with one man, no amount of political machinery can outweigh the fact that the country is governed by a dictator.

Yet this so-called "constitutionalization of Fascism" calls forth a fervent paean of praise from the Fascist chorus. With all the zeal of religious enthusiasts the "philosophers of Fascism" point out what a magnificent step forward is this, the ultimate triumph of the revolution.

There is something almost pathetic in

the devotion of the Fascisti to Fascism. For them Fascism is the accumulation and the final expression of all the virtues. Mussolini is not a dictator and the Fascist leaders are not an oligarchy dominating the nation. They have so long insisted, that they have come to believe it themselves, that Fascism is a union of all "clear-sighted" Italians for the rejuvenation and the advancement of Italy. The parallel to the Bolshevist seizure of power by a "class-conscious" minority is complete.

And the Fascists are as quick to characterize as "Bolshevist" everything that does not harmonize with their creed, as are the Bolsheviks to characterize as Fascist everything that does not appeal to them. Both alike find it necessary to assume that they represent the real will and best interests of the people whom they govern. Both alike refuse to give that will and those interests any chance to express themselves. Only the devotees are "clear-sighted."

In this blind devotion of the Fascist is to be found the saving grace of Fascism. Many Fascisti besides Mussolini get a real spiritual thrill out of acting up to their high principles. Charges of graft or material exploitation are heard against only a few of those in power. It is this combination of reiterated high purpose and effective action that not only makes the Fascist régime tolerable to the mass of Italians, but has even secured for it a measure of popular approval.

One thing that the new constitutional position of the Grand Council does, is to furnish a categorical answer to the question: "After Mussolini, what?" It is provided that the Grand Council shall submit to the King a list of names of suitable candidates from which he shall name Il Duce's successor. Hereafter all Fascisti may be depended upon to give this ritual answer when the awkward question arises. The sophistry of the whole matter lies in the fact that Mussolini *has* no successor. He is a political phenomenon such as occurs only once in a century or two. Fascism without Mussolini would be but an empty shell. It is not inconceivable that the momentum already acquired might carry it for some years after his death. But it is inconceivable that a successor who might step into his place could carry on the movement as he has carried it on.

Unless Fascism is to reverse all the lessons of history, it will lose its religious and devotional character as the men who created it give place to successors who cannot be expected to share the fanatical zeal of the founders. The good there is in Fascism is bound to lose its effectiveness with the passing of men and years, while the bad will become more and more oppressive. The Italian people will then have to shake themselves free from the shackles of the Fascist sophistry and find a more effective answer to the question: "After Mussolini, what?"

Gas in the Next War

DAVID STARR JORDAN once said that for a people to talk of "our next war" was the same as for an individual to talk of "my next murder." However, there is as yet no assurance that there will not be "next" wars, for other nations if not for ourselves, and there is every evidence that these wars will assume forms more horrible than any yet experienced. The International Red Cross Conference, meeting recently at The Hague, considered the whole problem of protecting areas of civilian population against gas attacks. The conclusion was that there were no adequate means of protection. If the enemy used gas the civilians, like the soldiers, would have to suffer.

As a despatch from The Hague tersely announced, "The entire subject was made more complex because the properties of several gasses known to exist for war uses at the present time are secret." It was pointed out that gas was an especially useful weapon for the poorer nations, or for those not permitted to maintain large armaments. The Germans, as the recent tragedy at Hamburg indicated, are undoubtedly experimenting with gases. This may not be all that is going on under cover, though not necessarily in Germany.

There has been much talk of the use of bacteria. Public opinion everywhere may condemn such a weapon in time of peace. We cannot be sure, however, that it will not be employed and countenanced by the people of a nation that feels itself fighting for its existence. The purpose of conducting a war is, after all, to win. There is no known instance in which a nation has allowed itself to be defeated out of pure chivalry. The more desperate the struggle, the more desperate the means that will be resorted to. Spanish influenza came unbidden out of the World War. In the next great war we may see scientists manufacturing in laboratories a far worse disease, immunizing their own populations against it, and sending it out to fight for them.

The only practicable proposal that came out of the conference was that urged by the American delegates, that the subject of warfare by gas and by bacteria be given the widest possible publicity. Whether publicity in time of peace will prove of much use after war has begun may be doubted. But it is important for every one to understand in advance exactly what modern war involves. We must stop thinking in terms of troops marching to military music in picturesque parade formation and begin to think of the creeping and horrible death that a struggle between nations is now likely to involve. We must change our whole set of military figures of speech. Once a nation's heroes marched away to protect the people at home. Now every one, even the infants in arms, will have to do the suffering and risk the dying, even though having no share in the fighting.

Not So Little Old New York

PERSONS who rejoice in large figures must have been glad to know that New York City, according to the Census Bureau estimates, passed the 6,000,000 population mark on July 1st. To be exact, it had on that date, unless the Bureau erred, 6,024,761 inhabitants. This represents an increase from 5,970,800 in 1927; 5,620,048 in 1920; 4,766,385 in 1910; and 3,437,202 in 1900. One interesting detail is that the last-mentioned total is only 400,000 less than the present estimated population of Chicago. Another is that the ratio of increase for New York is less than that for Chicago, Philadelphia, Detroit, or Cleveland. Since 1920, New York has added to its population by about one sixteenth, Chicago by about one tenth, Philadelphia by a little less than one tenth, and Cleveland and Detroit by between one third and one half.

A city is much like any other organism. If its environment remains about the same its rate of growth slows down with age. The exception is a large one, for a sudden stimulus may transform a peaceful old town like Detroit into a metropolis, or submerge historic Berlin in the rush and vulgarity of triumphant modernism. But we may still assume that when a city gets into the millions it advances into a region of diminishing returns. Traffic congestion, transportation difficulties, and high rents are walls that keep out even the willing newcomers. The urban area becomes more and more like that twenty-five ton animal that flourished some 20,000,000 years ago in what is now the Desert of Gobi, and whose remains Dr. Roy Chapman Andrews of the American Museum recently unearthed. Its body becomes too large for its brains, and it grows too unwieldy to go anywhere, do anything, or have very much fun.

Analyses of the census statistics show that while our urban population continues to grow at the expense of the rural districts, this growth is at the lower rather than the upper end of the urban scale. There has been a very considerable development in cities of less than 100,000 population, which are not cities at all in the New York significance of the word. There is reason to believe this will continue, since for most of the inhabitants a city of between 50,000 and 100,000, or even less, offers practically all the advantages of the metropolis. A few more inventions like the talking movie, and Broadway will have little to sell that Main Street cannot duplicate.

Yet New York has intangible values

that smaller cities lack. It is likely to remain for some decades—perhaps until Chicago can catch up—the financial and cultural capital of the nation. It will remain a market place to which the best the country can produce will be brought. It will be the intermediary between Europe and America. It will be the place to which the back-country American, who is, after all, the most important American there is, will go when he wants excitement. It will keep, no doubt, that delightful freedom, that appalling and amusing wickedness, that irreverence that is at once the joy, the despair, and the detestation of the rest of God-fearing, home-loving America.

But it will probably become—in fact, it is every day becoming—more and more a city one is glad to visit but in which one wouldn't care to live. Even now it is in no sense a livable city. One wonders at those of the 400,000 newcomers since 1920 who came to New York voluntarily rather than because they happened to be born there. A few thousand of them may have made spectacular successes of one sort and another, and to be a success in New York is thrilling. But what did the others get out of it? This is a question that more and more people will be asking as time goes by. Eventually it will doubtless be found that the metropolis doesn't mean as much as it used to, largely because swift travel and instantaneous communication have spread most of its advantages over the whole face of the land without carrying the accompanying disadvantages along with them.

Was Malthus Right?

A CENTURY AGO most Americans believed that it would be hundreds of years before the great West was fully settled. The settlement of Africa and South America seemed even more remote. But now we have, in the opinion of some economists, an agricultural problem more baffling than any that figured in any political campaign this year. Not only are the once waste areas of the earth being more and more completely utilized, but the time is perhaps in sight when they will begin to yield diminishing returns. The World War may have marked the beginning of the end of the period of lavish plenty that culminated in the late nineteenth century.

Sir George Handley Knibbs, of the University of Sydney, Australia, has recently published a book on "The Shadow of the World's Future," in which he poses a very critical question. "The extraordinary increase in the standard of living which has characterized the last few decades," he points out, "must quickly be brought to a standstill or be determined by the destructive forces of human extravagance. Very soon world politics will have to face the question of whether it is better that there should be larger numbers and more modest living or fewer numbers and lavish living."

Obviously, the first effects of an increase in population beyond the present limits would be to alter our food habits. We already feel the pressure in the rising prices of meat. The vegetarian nations of the Orient doubtless became so because they could not afford the pasturage that the food animals require. The sacredness of the cow in India may have had a very practical significance. But whether the nations of the Occident, with their far stronger grip on the actualities of life, will follow in the path of the Orient seems doubtful.

Every rise in the standards of living in the Occident has been followed by a decline in the birth rate. The old-fashioned family of ten, twelve, or more is no longer common among the middle classes in any American, British, or Western European nation. It was this development against which Colonel Roosevelt railed under the name of "race suicide." If is, of course, dangerous to a particular race only if that race keeps its birthrates down while other races allow theirs to continue undiminished. A very real possibility is that the Oriental nations and races will continue to multiply after the Western peoples have got themselves down to a basis of bare reproduction. The future has two menaces, therefore—the menace of starvation, or a greatly lowered standard of living; and the menace

of a great displacement of racial strength and numbers.

The solution, if solution there is to be, must also achieve two tasks. The first, and probably the simpler, task is to increase the food yield of the world per acre and per worker. This, as every student of agriculture knows, is already taking place, rapidly in the United States, more slowly elsewhere. The war has accelerated it not only in Western Europe but also in Russia. It is applicable to China and India, and we may look for it there within a generation or two.

The other task—the gradual reduction of the birth rate without violating half the world's religious convictions and without changing too greatly the present ratios between the races—is immeasurably more difficult. Upon its accomplishment will depend the future of the human species—our wars, our commerce, our civilization. One hundred years may tell the story. Two hundred certainly will. When we think of the agricultural problem it is not too soon to begin to align our ideas about it with this far more profound, far more far-reaching crisis that no McNary-Haugen bill is likely to bring to an end and no one political campaign to adjust. But there is no occasion for despair. Humanity has more resources and probably more self-control than Dr. Malthus gave it credit for.

Educational Costs And Profits

DURING the past four decades the population of the United States has increased about 80 per cent., the national wealth about four times, and the cost of public education about eight times. In 1890, the taxpayers spent about $140,000,000 for schools. This year the total is well over $2,000,000,000. Add the amount expended upon commercial and privately endowed schools, colleges, and universities, and the total is impressive, even for a nation of 120,000,000 people.

Are we receiving fair returns on this huge investment? Such a question cannot be answered wholly in money terms, yet since we live in a commercial civilization money terms must have significance. Consequently, the results of a survey of the relation between education and individual income have a bearing on the usefulness of our schools. One such survey has recently been completed by the Alpha Kappa Psi fraternity, which represents students in schools of commerce. Its title is perhaps the only Greek thing about it, since it is primarily concerned with conceptions of profit and loss that would not have interested the classicists.

The director of the inquiry, Everett W. Lord, collected replies from as representative a group of 7,396 individuals as he could find. As might have been expected, any degree of education raised the earning power of the individual receiving it above the level of those with no education at all. In general, high school graduates received more than those who had stopped with the common school, and college graduates more than high school graduates. In the course of a lifetime the boy from the elementary school, Dr. Lord estimated, would earn about $64,000—a large sum in itself but not much when spread out over about forty-six working years. On the same basis, the high school graduate, working about forty-two years, would earn $88,000 and the college or technical school graduate, working about thirty-eight years, would earn between $160,000 and $200,000.

There are exceptions such as all of us are familiar with in our daily experience. These are especially numerous in the older groups, which may indicate that some years ago it was easier to make a profitable start without much education than it is now. It is also interesting to note that beyond a certain point college education does not yield enhanced financial returns. Men who take the M. A. or Ph. D. degree earn less than their classmates who are content with a mere B. A. The reason is that they usually enter the relatively underpaid professions of teaching and research. Among the professional graduates the lawyers earn much more than do the physicians. They also do better

on the average than those who have taken courses in business administration.

But these exceptions and variations are of less importance than the demonstrable fact that education, whether specialized or not, does pay. For every dollar we spend on education, Dr. Lord thinks, we get back at least six in increased earning power. It may not be strictly true, as he argues, that the national income is the sum of the nation's individual incomes. It is certainly true, however, that living standards have a ratio to average incomes. Education not only brings one more money to spend but teaches him better ways of spending it.

But we must go behind the statistics if we want to know all that is taking place. America has less and less use for masses of unskilled workers. More and more the machines are doing what human muscles used to do. Even a little skill may multiply the worker's productive capacity several times over. Business and industry demand and are getting a better quality of human being than they formerly had use for. Education may have its follies and its wastes. We are probably educating some of our population, particularly in the colleges, beyond the strength of native capacities. But the trend is toward a more intelligent, better-informed, and therefore happier nation. And this is worth the cost.

A Thirteen-Month Year?

MODERN SCIENCE and its stepdaughters, modern industry and modern business, have a way of dealing ruthlessly with tradition. The old-fashioned year, with its long and short months, is now in danger, if we are to take seriously the campaign being carried on by the National Committee on Calendar Simplification. This movement has its seat at Rochester, New York, and is backed by George Eastman, the camera manufacturer.

Mr. Eastman tested the sentiment of American business men by sending out 1,000 inquiries. Of the 650 individuals who responded 93 per cent. were in favor of simplifying the calendar, and most were willing to accept Mr. Eastman's plan. This calls for thirteen months of 28 days each, which leaves one extra day a year for a holiday in addition to the customary extra day in Leap Year. Perhaps the three hundred and sixty-fifth day could be devoted to taking inventories.

The practical advantages of the plan will be recognized by any one who has ever tried to make periodic comparisons of business done. "Modern business management," says Frederic W. Keough, spokesman for Mr. Eastman, "needs every aid to production, sales, economies in overhead, and so forth that can be had. But the basis of all its operations, the element of time, is so unscientifically measured by the present calendar that it is a handicap instead of an aid. Business management tries to build its economic structure by exact designs, but it has to do it on a continually shifting foundation."

According to Mr. Keough, some firms have already adopted the thirteen-month year for their private bookkeeping. He adds that the greatest objection to it is that the thirteenth of every month would fall on Friday. But perhaps even this would be in accordance with the great modern principle of spreading the overhead as evenly as possible. Thirteen slightly unlucky days might be easier to stand than three or four days of concentrated bad luck, as is the case under the present calendar. Thus, Friday has fallen on the thirteenth three times during 1928.

But practicable and even, in a sense, desirable though the proposed reform may be, it will be difficult to put through. The calendar is one of the oldest of human institutions. It carries within it, clumsy though it certainly is, the memory of older and simpler days, of the marching seasons, of seed-time and harvest, of gods now otherwise forgotten. It has poetic qualities that no perfectly sensible calendar could have. Perhaps we could not afford to throw it away, even to save a few millions of dollars a year. Unless, indeed, Mr. Eddie Guest or some other of our up-to-date laureates can contrive to impart to the new calendar some of the romance that envelops the old.

The Real Senator Borah

Twenty Years in Washington Has Not Weakened Him

HENRY F. PRINGLE

THROUGHOUT the decades he has been in public life William Edgar Borah, of Idaho, has faced, apparently undisturbed, a constant bombardment of derogatory adjectives and phrases. The mildest of these have described him as "inconsistent and destructive"; the strongest as "the greatest trimmer in the history of American politics." The liberals have hailed him as their leader only to damn him, the following year, for a conservative. The conservatives, having rallied to his banner for some battle, have later gazed with horror at his friendly attitude toward Russia and shuddered because of his Bolshevik tendencies. At one time or another he has disappointed nearly every faction that had called him great, and for ten years it has been bromidic to refer to him as "The Lone Rider," "The Solitary Horseman of the Senate," "The Lone Wolf." Yet though he has consistently been at odds with the potentates of Republicanism, except when seeking reëlection to the Senate, he has always refused to bolt his party.

"What a splendid Democrat he would make!" many a Jeffersonian has wistfully remarked in the Senate cloakrooms after Borah had been found in Democracy's camp on an important issue.

"What a *Republican* the son of a gun might make!" has been the growled reply from an angry, chagrined member of the G. O. P.

Being a highly intelligent person, less given to emulating the ostrich than are other men whose calling is practical politics, Borah is well aware of the criticism to which he is subjected. Twenty years of office-holding cannot fail to thicken the skin of the most sensitive person—and Borah has never been sensitive. But he still resents the accusation that he is inconsistent and was both angry and hurt when a writer called him a trimmer.

"I follow issues, not men," he protested. "My record shows no inconsistencies of principle. I am a Republican, although many people may not think so, and I have never advocated anything in the Senate of the United States that cannot be found in the teachings of the Republican party."

Perhaps no man, if he is active at all, can remain in Washington for so long a period and not face charges that he has contradicted himself. Borah, looking back on his career, feels that he has been faithful to his credo, that he has voted in strict accordance with two or three firmly held beliefs. From his point of view there is no vacillation in the fact that he opposed the Woman Suffrage Amendment on the ground of states' rights and persuaded himself to support the Eighteenth Amendment for the identical reason. He cannot see why people are puzzled when they recall that year after year he has been heard in behalf of disarmament and world peace—but fought the greatest battle of his life to defeat the League of Nations and the World Court. He can justify, and does so fairly plausibly, his early efforts to end the abuse of children by industry and his opposition to the Child Labor Amendment. Senator Borah admits no inconsistencies, not one, in his years on Capitol Hill. Not even the fact that during a campaign he never bolts, that then he is always on the band wagon, is illogical to him.

"They say," he told an interviewer, "that I have been a Republican only during campaigns. Well, in campaigns parties are proper and desirable. I haven't felt that I should go with the party, against my convictions, on questions of fundamental policy."

In other words, Borah is a follower only

IT'S NOT ALL WORK
The Senator, riding his mount "Governor" in Rock Creek Park, Washington, D. C.

when it is absolutely necessary. Thus in 1920, soon after the Republican party had won its glorious victory (in which Borah assisted) and the Ohio gang was sweeping on to Washington, he answered with reluctance a request that he confer with Warren Harding. The President-elect, who had been a fellow-Senator and who greatly admired Borah's superior mentality, invited him to become the Administration leader.

"Mr. President," he is said to have replied, "you can get along without me, but I cannot get along without my views."

In campaigns, however, parties are "proper and desirable," and Borah, though he may rock the boat, never upsets it. It was his belief in party government, his conviction that sudden revolts are futile, that caused him to remain in the fold when Theodore Roosevelt was forming the Progressive party in 1912, when Robert M. La Follette chose independence in 1924, when Senator George Norris, of Nebraska, was being urged toward revolt last spring. The beliefs of these men were, for the most part, Borah's own. But he had no desire to destroy the organization when he felt powerless to replace it. So he feels today; and it is to be hoped that this truth will never penetrate the minds of his party colleagues. If it does, Borah's influence as a constantly potential menace will vanish.

When the history of Borah's era is written he will doubtless be listed among those whose talents have been solely negative. Indeed, he finds his own greatest satisfaction in the recollection of combat against what he has conceived to be dangerous to the welfare of the United States, unconstitutional, or in violation of the tenets of the nation's founders. His highest claim for credit, he once said, is "for what I may have helped to prevent." Examination of his record discloses, none the less, that Borah has often spoken in the affirmative. His voice has been heard urging world peace, limitation of armament, justice for small nations, amnesty for political prisoners, honesty in government, economy, tax reduction, and the preservation of individual liberty for man.

It is the fashion, these days, to lament the passing of giants that roamed the aisles of the Senate Chamber. Once upon a time, it is held, all were mighty men whose influence spread to the four corners

of the earth, whose voices had as many tones during an oration as the organ in a Broadway motion-picture cathedral, who were profound in their scholarship. Undoubtedly, this is an exaggeration born of sentimentality for the good old days that will never return.

Yet there lingers about Borah, for all that his ideas are modern, a flavor of those probably mythical figures. In manner, in bearing, in presence, he was born to the toga. He is the stuff from which the fantasies of legend are spun, and it is pleasant to fall in with the notion that he is "the last of the giants." His speeches bristle with references to Washington, Hamilton, Jefferson, Burke, Gladstone, and Pitt, while the average Senator feels erudite if he can quote correctly from Lincoln's Gettysburg Address. Borah has been deeply influenced by these men, and the basis of his political philosophy rests, very largely, upon the conceptions of Washington, Hamilton, and Burke.

One cannot watch him in action on the floor of the Senate, however, without wondering whether he has not been influenced, too, by Edwin Booth, whom he walked miles to see in his youth. In all great public men there is a touch of the histrionic, and Borah with his over-long hair, his grace of gesture, his musical voice, his tendency to view with gloomy alarm, might well be a tragedian from some play. One is not surprised that, as a boy, Borah brooded over Shakespeare and yearned to join a traveling troupe.

Even without these talents, which pack the Senate galleries when he speaks, Borah would be an outstanding figure in Washington. As chairman of the Senate Foreign Relations Committee he is an ex-officio Secretary of State. He is the best orator in the Senate and has few equals in debate. He has a mind that can grasp the essential facts of some problem and the ability to state them clearly and eloquently. His long period in the Senate—he was elected in 1907 and has served continuously ever since—has given him a wealth of background. Add to this his refusal to speak unless he has something to say, and one understands, in part, why Borah's voice carries farther than that of any other man at the Capital, save the occupant of the White House alone.

II

Early in 1908, after he had concluded one of his first speeches in the Senate, Borah met a more experienced legislator in the corridor. The man looked at him with mingled respect and amusement.

"You were right in what you said," he remarked. "But you can't do that here and survive."

There were other men who told him the same thing, who warned him that it was better to be reëlected than right. And the fascination in Borah's career lies to no small degree in the fact that he has defied several of the most sacred rules of politics. He has even preferred being right to being President, and his name has never been presented to a national convention, although every four years since 1912 there has been a minor "Borah boom." On the other hand, he has been returned to the Senate for four terms, and this, in the face of his record, is nothing short of a miracle to many of his associates.

For Borah, whether he has always been sound or not, has been strangely honest with his constituents; and for a politician to be honest, writes Frank R. Kent in his latest book, "Political Behavior," is suicidal. Borah has fought predatory business, Mr. Kent concedes, but to a man from Idaho this was not dangerous, since there are few large corporations in that Western state. Had Borah been the representative of an Eastern state, he insists, his service in the Senate would have been limited to one term. To prove his point Mr. Kent points out that fifteen years ago, in the United States Senate, Borah criticized his party for pretending to champion the Negro, when actually most Republicans felt that it had been a grave error to give him the vote. Such a speech was possible for a man from Idaho, where the Negro vote is virtually non-existent. No Ohio or Indiana representative could possibly make statements except in praise of the Negro.

I do not know the exact speech to which

Mr. Kent refers. In March, 1914, however, Borah exploded that the Fifteenth Amendment was "a dead letter" and that "writing it into the Constitution" had been "a grave mistake." It was a measure passed "in retaliation and revenge." No race could be lifted so quickly out of "a thousand years of savagery and barbarism, of three hundred years of slavery." The Negro could not be expected "to perform all the duties and obligations of citizenship of a highly civilized republic!"

Obviously, this was not pleasing to the Negro brethren in the G. O. P. Obviously, too, it was safe enough for Borah so to speak, since the number of Negroes in Idaho was negligible. But what, in fact, was the central theme of Borah's address on that day? It was not the Negro question at all, but woman suffrage; he was opposing the Woman Suffrage Amendment on the theory that it could not be enforced any more than can the Fifteenth. In the retrospect of history some of the predictions that he made are absurd. An advocate himself of equal rights, Borah made the flat statement that changing the Constitution was the "most impractical and impossible way" in which to achieve it. He went on:

> Let me say to the good women of this country that I believe after they have fought for fifteen or twenty years for an amendment to the Constitution . . . they will come back and make their appeal to the individual states . . . and in all states where it is not met with the insuperable barrier of race conditions women will be given the right to vote.

As prophecy, this was slightly idiotic. But I offer it in answer to Mr. Kent's assertion that never, except in the most trivial way, can a politician be frank to his constituents. Borah took a grave risk in opposing the amendment, since the women of Idaho had been voting for more than fifteen years. They undoubtedly had the power to decree his defeat when he should again run for the Senate. During the two or three years that followed, the movement for the extension of suffrage by amending the Constitution gained momentum, but the Idaho Senator continued to fight it. In 1918, it was his vote that played a large part in defeating the joint resolution, and the next fall the suffrage workers swarmed into Idaho.

The local Republican organization, anxious to elect the state ticket and perturbed because Borah was seeking reëlection, was soon in a high panic. The leaders telegraphed to Washington that he had a perfect right to permit his own defeat, but that it was treason to drag every one else to disaster with him. Why not be reasonable? Why not intimate that he had an "open mind" on the amendment?

"I won't do it," replied Borah, in effect. "If you got into bad company by having me on the ticket it's your own fault."

Nor has this been the only occasion when Borah has dared to differ with his constituents—a course he has defended, "since otherwise an elected representative is merely a messenger." The people, he points out, can refuse endorsement on election day if they disapprove. He fought the soldier bonus although the proportion of ex-service men was probably as large in Idaho as in other states. He was one of the first to attack the McNary-Haugen bill offered by the farm leaders as a panacea for all the ills of the soil. He has even said that the farmer, while unquestionably needing assistance, is not so aroused as are "those who farm the farmer," meaning the professional leaders. And of course he suggested recognition of Russia when, in the farm states of the Northwest as well as in New York and Boston, respectable citizens peered fearfully out into the dark in the belief that Soviet spies lurked in the gloom of every shadow.

III

The extraordinary hold of Senator Borah upon the people of Idaho, a strength that has survived the extreme displeasure of the state machine, is certainly not due to any complete harmony between his mind and the collective one of his supporters. The explanation of Borah's strength lies partly, I think, in the char-

acter of the man himself—if an American politician is really big he can dare to have a mind. But a clue is to be found, also, in the universal inclination of Americans to believe that what is well known is necessarily right and that the man whose name is familiar to all is undoubtedly the best-qualified for any post he may desire.

There is an element of local pride in it all, too; Borah is one of the great figures in Washington. He played a greater part than did any other one man in shaping, at Kansas City, the platform of his national organization. His utterances are debated, since he is now chairman of Senate Foreign Relations, on the Quai d'Orsay and in Downing Street. The Washington correspondents are always at their posts when he speaks, and soon the cables hum with his words. Borah brings to the state of Idaho, in brief, more publicity in a single session of Congress than all the chambers of commerce in her widely scattered cities can accomplish in ten years. It is gratifying to Idaho, a state without political significance and ignored during a Presidential campaign, to know that her senior Senator can disturb, if he chooses—and he usually does—the sleep of Presidents and Secretaries of State.

Boise has its main street with stores and offices, one or two hotels, and several movie theaters. On this street is located, also, the Club Café, a restaurant of the type to be found in every small city in the land. Most of them have proprietors who are Italian or Greek—I do not recall his nationality in Boise. On the plateglass window is lettered "Ladies Invited." At the cashier's desk presides an astonishing blonde, and near her is a bowl of toothpicks. There is a lunch counter on one side, where meals can be served with additional speed.

Nearly every summer day at noon eight or ten of Boise's leading citizens gather at a table reserved for them at the rear of the Club Café. Among them is the manager of the local baseball team, whose avocation is the science of politics. There are two or three lawyers, a bank president, several business men, an editor, and the political writer of a Boise newspaper. Unless he has been called out of town, one

"NO!"

Senator Borah discusses with newspaper men his refusal to run for the Vice-Presidency in the campaign of 1924.

of the round-table lunchers is certain to be William E. Borah. The unofficial motto of this informal organization, "We Disagree," is peculiarly appropriate to Borah's career, and he does not miss a session if he can possibly avoid. it.

The slogan is no empty one, for several of the men who attend are ardent wets and one or two are Democrats. Borah's devotion to prohibition is repeatedly a subject for discussion, and his theory that modification of the Volstead Act is nullification is subjected to spirited attack. On the whole, however, the Senator dominates the luncheons.

It is an unusual summer when Borah fails to get back to Boise for at least a few weeks. He was there this past summer, despite the convention and the campaign, in which he took an active part in behalf of Herbert Hoover. Borah's strength in Idaho is more easily understood when he is thus seen in his native habitat. His life is that of the average small-city lawyer, except that he lives more simply. A man of moderate means who is almost wholly dependent on his Senatorial salary, he found it necessary to rent his home in Boise. Now he lives where he can, usually in the home of some sheep-rancher who is away. He keeps no car and goes to his law office on the bus, or, if she chances to stop for him, in the automobile of his more plutocratic secretary.

In Boise, as in Washington, Borah goes out comparatively little. He is not in the least unsociable, as his attendance at the Club Café luncheons shows, but he finds his own company excellent. In Washington he might be a social lion. In Boise he is deluged with invitations to dine. In both places he prefers either to read or to ride horseback, his only form of exercise. Whether he rides through the hills around Boise or through Rock Creek Park at the Capital, he looks for all the world like some obscure rancher. Nothing could be more ludicrous than Borah in riding breeches, neat boots, or a derby hat!

His law office in Boise is on the second floor of a "brick block" some distance from the main street and is as dusty, as drab, and as shabby as that of any rural "attorney at law." The occasional visitor faces no barrier of smooth private secretaries. The door to Borah's private rooms is usually open. Seated behind his desk, shuffling the conglomeration of papers, reading his mail, there is nothing of the internationally known statesman about him.

Yet he is impressive enough. The hair, which he wears rather long in back, is growing a little gray but not in the least thin. His eyes are, I think, the outstanding feature of his heavy face—blue, alive, good-humored. His voice is a little thick and, in conversation, is low. His fingers are short and stubby and they move constantly. First he arranges and rearranges the papers in front of him. Then he picks up an old-fashioned pen, dips it in the inkwell and writes, over and over again, "William E.," "W. E.," "W. E. B.," or "William E. Borah." Autograph hunters seeking a specimen of Borah's signature would have only to search through his wastebasket to find enough for a lifetime.

When seen informally—off the stage—Borah is far less austere, far less gloomy than he appears in his photographs or when he is in action on the floor of the Senate. He frequently smiles and can tell a story gracefully. His sense of humor may be a shade sardonic, but it is real enough. One day last year Senator Couzens, of Michigan, who made innumerable millions with Henry Ford, met Borah in the Senate Office Building. He held out his hand in petition.

"Please, Senator," he said, "I need a dollar for lunch. I left my wallet at home."

Borah frowned. "That's the same old story, Couzens," he replied. "The truth is, you're broke."

I cannot vouch for another of the Washington anecdotes concerning Borah. Its artistic perfection as an explanation of his character is, in fact, evidence that the incident never occurred. According to the story, he received, during the late spring of 1924, word that the nomination for Vice-President was his if he wanted it. Since he had been offered the post in 1916, when the G. O. P. was attempting to heal

the split between the Progressives and the old-line Republicans, and again in 1920, he was not greatly impressed. But he went to the White House, of course, when President Coolidge asked him to call. The President is said to have invited him to "take a place on the ticket."

"Which place?" Borah is supposed to have answered.

It is said in political circles that Borah has more friends among the Washington correspondents than has any other member of Congress, and this, I think, can be attributed to two things: an intangible but very definite charm, and the fact that, in conversation, he is rarely discreet. He probably said things to every newspaper man in Washington—as he did to me—that, in print, would have caused as much excitement as an announcement by Andrew Mellon that he proposed to vote the Socialist ticket.

SENATOR AND MRS. BORAH
The man from Idaho is often seen in Washington even when Congress is not in session.

He is popular, too, because he is able to discuss subjects apart from his official life. He reads voluminously, chiefly history and biography, and many an author has been pleased, if a little surprised, to receive a brief note commenting on his book. Borah's rooms in the Senate Office Building are in a remote wing in the basement, possibly because he likes to be by himself. But they are frequently the scene of long discussions among the correspondents and the Senator. They differ little from those at the Club Café in Boise.

Any one who has heard Borah speak is aware that his mind is alert and facile. He has not, perhaps, the fire of Jim Reed at his best, and his voice may lack the full resonance of William Jennings Bryan. In debate, however, he has rarely been excelled. He is happiest when the Senate Chamber resounds with "Will the gentleman from Idaho yield?" when a dozen excited members clamor for attention, when the wrath of the Democrats is equaled only by that of Borah's fellow-Republicans. Even when he knows that he will speak for an hour to sum up a debate that may have been raging for months, he has only a few notes to guide him. And it is a tribute to the clarity of his intellect that the stenographic records of these extemporaneous orations are as convincing, in cold type, as with the assistance of voice inflection, gestures,

and the commanding personality of the speaker.

It is only over a long period of years that Borah seems illogical—never during one speech or one debate. Only then does one discover that he has praised the Jeffersonian advocacy of states' rights and, a little later, has called Alexander Hamilton probably the greatest genius in government of all time. One feels, after reading scores of his speeches, that Borah falls short of being a reasonable man. He is often obstinate, and he admits only with the greatest reluctance that he has been wrong. One assumes that he recognizes his own gifts and is self-complacent without being unduly vain. Possibly vanity is just slightly responsible for the fact that throughout his life he has been a "no man" and cannot endure being a "yes man."

But these abstractions do not interest the people of Idaho. In the old days they voted for Borah because he was progressive, dynamic, and clever. Always nervous, despite himself, as his term draws to a close, he is farsighted enough to know that Americans resent the absentee politician. So he hires a car each summer and tours the state. He talks with the sheep men, the farmers, and the merchants. He addresses the granges and the civic organizations. He knows the local problems and he convinces these people that their cherished notions of how the government should assist them are unsound, uneconomic, vicious, and futile. He tells them that his own are constructive and noble. Somehow, in the end, they believe him.

IV

Borah, of Idaho, should the day come when he is no longer active, will find it difficult or impossible to select the outstanding moments of his career. He was living in the American Grand Manner—in the flare of headlines—when Herbert Hoover was known only to the engineering profession, when Calvin Coolidge was beginning a career that was to end, with the aid of God, in the realization of the impossible, when Woodrow Wilson hoped to write history and did not dream of making it, when Alfred E. Smith was a Tammany hack. The most reckless soothsayer would have hesitated to predict fame for any of these. Borah, however, was known throughout the Northwest in his early thirties.

But the story of his youth is in no way remarkable, a story so typical of America that the telling has long since grown repetitious. He was born on June 29, 1865, in Fairfield, Illinois, one of ten children whom William N. Borah, a farmer, struggled to support. The household was a religious one that worshiped a God who frowns on pleasure. The elder Borah was a devout member of the Presbyterian Church and sometimes filled the village pulpit when the minister was away. The Lord was responsible, on this farm in Illinois, for the blessings of a thick, black earth and for the harvests. But man was culpable, being a creature of sin, when the harvests failed to provide funds for the education of ten children.

In current phraseology the boy Borah would probably have been called an introvert, a youth inclined to withdraw into himself, to be serious, to read a great deal. He knew all of Shakespeare before his formal education was well under way, and farm life, with its heartbreaking toil and monotony, was intolerable. Borah longed for something better. His father was shocked when the boy suggested joining an itinerant Shakespeare company that was in the neighborhood and needed an actor for the rôle of Marc Antony. He gave his consent, however, when his son announced a few years later that he had decided to study law and proposed to attend the University of Kansas. He had already been enrolled at the Southern Illinois Academy at Enfield.

In 1889 Borah was admitted to the bar, having done his law work at night while at the university, and for the next two years he practiced in Lyons, Kansas. Then he decided that the new country farther west offered greater opportunities, and he made plans to go to Seattle. He found, however, that his funds were just sufficient to take him to Boise, Idaho, and he bought a ticket for that place—his

choice determined by the fact that he had one or two letters to its citizens. In 1891, as to-day, Borah was an individualist. He had no law partner, but began to practice in Boise by himself.

Whether he soon became active in politics to increase his number of clients, or whether he had studied law with an eye to public life, is not on record. At any rate he was soon a cog in the state Republican machine and then became secretary to Governor McConnell. In 1895 he married the Governor's daughter, and the next year, as though to prove that even matrimony could not cloud his independence, he ran for Congress on the ticket of the now-forgotten Liberal Republican party, which supported the free-silver program of Bryan.

As yet, politics was not Borah's first interest. He was building up his law business and was prospering without attracting undue attention. He might have continued to grow prominent slowly; gaining an added reputation as an attorney and perhaps reaching, as the peak of his career, the Governorship of the state. Fate, however, chose to accelerate his pace. Idaho in the '90's was less of an agricultural than a mining state, for there were stores of silver and gold in the yellow hills. In 1896 the entire state was shocked by news of rioting in the Cœur d'Alene mines to the north and by word that several men had been killed in a battle between union and non-union forces.

In the summer of 1899, several of the participants were placed on trial for murder, and Borah served as special prosecutor. His name was on the front page for days, and his fame was spread even farther, by word of mouth, through the recounting of one of those brave, bold stories that the West cherishes. The state had intended to prove that one of the defendants had been seen with a rifle across his knees on the top of a freight bound for the mines on the morning of the riots. This was presumptive evidence that he had taken part in the fighting.

Borah received word as the trials began, however, that the man's attorneys were prepared to offer complete refutation. They planned to call the crew of the freight, all impartial witnesses, to swear that it was impossible for the supposed slayer to have been riding on the train. The many curves and the rough roadbed would have sent him hurtling from the box-car roof where he was alleged to have been seen.

Borah saw his chance of a conviction disappearing, so one morning, while the trial was in progress, he ordered the railroad (a small spur line and therefore amenable to orders) to make up the freight in the identical form in which it had been operated on the previous occasion. He further ordered that the same trainmen should be assigned to the run. This having been done, it was to be sent bounding over the stretch of track replete with curves and bumps. Borah's instructions were obeyed, and those who watched the train pass were astonished to see, perched atop the box car, a rifle on his lap, the gallant young state's attorney. An hour later he appeared in court, begrimed with dust but accompanied by the trainmen who had been listed as defense witnesses. He put them on the stand himself, and they told a graphic story of how he had defied death.

"It convinced the jury," Borah recalls with satisfaction. "They slept while the defense put forward its case."

Idaho continued to seethe with unrest, though, and on the night of December 30, 1905, former Governor Frank Steunenberg, who had been vigorous in putting down the Cœur d'Alene riots, was assassinated. Suspicion centered upon certain labor leaders, and again Borah was summoned to act as special prosecutor. By now he was being called "the most enthralling speaker in the Northwest," and when word drifted East that Clarence Darrow was to defend "Big Bill" Haywood and two other radical labor leaders charged with conspiracy to murder the Governor reporters hurried to Boise from Chicago, St. Louis, and New York.

The trial, held in the summer of 1907, was a first class legal show. On one side was Darrow, calm, phlegmatic, confident—rated as one of the greatest criminal law-

yers in the country. On the other was Borah, a power in the state, a close friend of the slain executive, a speaker whose words came rushing in a torrent and who was yet so scrupulously fair that he never once referred to Haywood as a murderer, but always as "the defendant charged with conspiracy to murder."

As he finished, even counsel for the defense crowded up to offer their congratulations for the manner of his presentation, but the jury found Haywood and the others innocent. It was Borah's last criminal trial; a new phase of his career had already started. In 1903 he had presented himself to the legislature for election to the United States Senate and had been knifed by the machine leaders who, even then, doubted his regularity. "King Caucus must go!" he shouted, and four years later he toured the state repeating the phrase. So convincing was he that the people elected a majority of legislators pledged to send Borah to Washington.

V

By 1907 the Capital had grown accustomed to the arrival of strange figures from the barbarian states beyond the Mississippi. They inclined, even then, to radicalism. It was believed that they were certain to be ill at ease among the Best People. A few neglected to wear socks. But Borah, every one was aware, was not one of these. It was true that he had fought the Idaho Republican organization and had leaned toward Bryan in 1896. He had atoned for these sins, however, by his services in the labor cases and he had, of course, already attained national prominence. The Old Guard felt entirely cheerful about the coming of Borah and assured itself that he was "all right."

So confident, indeed, were the Senate leaders that he was safely conservative that they placed him on the Committee on Labor and Education, an unusual honor for a freshman member. To their dying day they regretted their optimism, for Borah began immediately the independent, radical, downright treasonous activities that were to mark his Senate career. In 1907, it will be recalled, Theodore Roosevelt was brandishing his big stick and thundering that monopoly must be controlled. Borah went farther, demanding that monopolies be destroyed. He was responsible, during the next few years, for the creation of the Department of Labor, an innovation viewed with grave apprehension as evidence of the danger point to which unionism had progressed.

He horrified the Old Guard still further by calling for an inquiry into the twelve-hour day in the steel mills, by remarking that those who had framed the Sherman Anti-Trust law had underestimated "the ingenuity, the almost supernatural sagacity of greed." He joined the Democrats in seeking an investigation of the sugar trust and opposed a protectorate over Nicaragua on the theory that it was a scheme of the international bankers to get some plump concessions. He called for popular election of Senators and urged a measure giving an embarrassing degree of publicity to campaign expenditures. And constantly and energetically he crusaded for economy in government, dealing blows to the spendthrifts of both parties.

Borah had small use for Taft as President, and when Roosevelt announced his candidacy for the 1912 nomination the Senator from Idaho was one of his ardent supporters and closest advisers. He went to Chicago to act for Roosevelt in the numerous contests for delegates and made no secret of his belief that the Taft forces stole the nomination. But all that was long ago, and the years have obscured the record of those exciting days. Now Borah is damned because he did not follow Roosevelt into the ill-fated Bull Moose ranks, just as he is criticized because he did not join La Follette. He did not do so, as I have said, because of his conviction that party government is right and proper; and he was making his position very clear prior to the 1912 convention. He had said that he would not bolt and he had advised Roosevelt not to do so.

But Roosevelt was a leader, which Borah is not, and on that turbulent night in June when his supporters were shouting

themselves hoarse he could not deafen himself to their pleas. Borah was with Roosevelt, in his hotel rooms, while the Colonel of the Rough Riders was pondering what he would do, and finally he was asked to go out and speak to the crowd. But Borah would not go. This was not the way in which to build a new party. Defeat was certain. There was a moment of silence, and then the doors of the room burst open and a madly excited group of Bull Moosers burst in with telegrams pledging support. Borah looked at them, turned on his heel, and left. Roosevelt, his emotions again getting the better of his reason, bowed to the mob—and never again was his influence in American politics so important.

It is obviously impossible, within the limits of this friendly analysis, fully to tell the story of this singular hermit of Capitol Hill. Some day, one hopes, he will find time to write his memoirs and give in his own words the record of his crowded years. I have suggested that Borah would find it difficult, if not impossible, to choose from the many moments one that stands out above the others. Perhaps, however, he might select that day in November, 1919, when, after long months of bitter debate, he closed the argument against the League of Nations.

The oration of that day, November 19th, will live as one of the outstanding in the history of the Senate, and on that occasion Borah was truly great, even if only in negation. Here was the irreconcilable at his best; not ranting, not resorting to personalities, but earnest, desperately sincere. At first he was calm, an attorney opening his case before a jury in whose intelligence he had faith. The League, he said, constituted a grave peril to the future of America. To join it was to abandon "the great policy of 'no entangling alliance.'" In its essence it was contrary to the fundamental principles of the Republic.

Gradually, as he spoke, Borah seemed to be alone, unconscious of his fellow-Senators. Not a sound came from the packed galleries as his voice rose and fell. The League was not a league for peace, but for war. In opposing it "I do nothing more than decline to renounce and tear out of my life the sacred traditions which through fifty years have been translated into my whole intellectual being."

So he continued, always turning back to the inestimable wisdom of Washington and protesting that this must be a guide in the twentieth century. Even those who disagreed with Borah and who felt, as I do, that he was lacking in vision on that day, were deeply moved, and when it was over the impassive Henry Cabot Lodge had tears in his eyes. And as the Senate prepared to recess a page brought to Borah a hastily scribbled message from Vice-President Marshall, a Democrat and an advocate of the League.

"Even an old mummy on a pedestal," this read, "could not remain silent after such a speech."

VI

Inasmuch as he is chairman of the Senate Committee on Foreign Relations the importance of Borah in the future must rest on his viewpoint regarding the other nations of the world. It is unfortunate that he is known chiefly for obstruction. His fight against the League of Nations, the World Court, and the Treaty of Versailles has obscured the fact that he initiated both the Conference for the Limitation of Armament and the more recent treaty purporting to outlaw war. Borah feels that it is safe for nations to work together as long as they do not admit the legality of combat. He is enthusiastic in his praise of the Kellogg treaty not because he has any delusions that it means very much but because he believes it a step in the right direction.

Borah is deeply suspicious of foreign alliances, foreign military programs, and the cunning of European diplomats. He is pessimistic regarding their motives. He feels that until they reform their ways America must remain aloof. Borah reads voluminously regarding conditions abroad and is, no doubt, as familiar with conditions as is any man in Washington. Yet he has never been abroad and has no great desire to go.

"I think I should add little to my

knowledge," he says, "by infrequent, brief trips to Europe. It is often wiser, I think, to stand off and obtain a clear picture. One might become merely confused by first hand information. I shall, however, go abroad as soon as I possibly can—some people in Europe may feel slightly hurt that the Chairman of the Senate Foreign Relations Committee does not visit them. I would not have that happen for the world."

It may be true that Borah is a shade provincial. It may even be true that he is opinionated and inclined to make life wretched for the State Department. On the other hand, he is a gentleman in the best sense of that word. He really believes in the fundamental virtues—decency, honor, truth. In all the battles of his life he has never engaged in personalities, and even Woodrow Wilson, whose dreams he helped to wreck, felt no bitterness toward Borah during those last dark hours of his life. The fundamental virtues, he feels, are as vital to international relations as between gentlemen. So he has spoken in behalf of small nations. He has advanced the thought that because the United States is powerful she must refrain from being a bully. He has uttered, speaking of the tiny countries of Latin America, a thought that should be emblazoned over the doorway of every consulate in the world:

"God has made us neighbors. Let justice make us friends."

The trouble with Borah is his tendency to become interested in an extraordinary variety of matters. He lacks the ability to limit his activities. He does not carry through. He has been unflagging in his advocacy of honesty in government, but Washington still snickers at the recollection of his efforts to collect $160,000 for the Republican party to hand back to Harry Sinclair. He got a few thousands and abandoned the attempt.

He demanded recognition of Russia in an address that was eloquent and logical. But Russia is still an outcast in so far as the United States is concerned, and regarding recognition Borah has long been silent. The farmers needed government aid, and Borah demanded that they receive it. But he vetoed the McNary-Haugen bill and did not press a substitute. Individual liberty is fettered by legislation born of the war. Even individual rights, even Borah's cherished belief in states' rights have fallen under the Eighteenth Amendment. And here Borah's complicated political philosophy demands that there shall be no change.

Nothing could illustrate more clearly the fact that he is not a leader than does his prohibition record. Despite himself he is the leading spokesman for the dry cause, but he will have nothing to do with the Anti-Saloon League and has never made a speech in behalf of prohibition. He is the leading spokesman, despite this, because he is opposed to modification or to repeal. Borah stretches his theory of states' rights to the point where he says that a dry state, like Idaho, has the privilege of believing intoxicants harmful and cannot bar them unless there is a Federal law. Modification, he insists, is nullification; and then one recalls that all of the discriminatory acts whereby the South has evaded the Fifteenth Amendment have been upheld by the Supreme Court. Borah has actually called attention to this but is apparently unable to see that any law modifying the Volstead Act would be similarly blessed before it became effective.

It is not likely that Borah will change, in his essential philosophy, during the years between now and 1930, when he again seeks election. He will sometimes be on cordial relations with the White House and its new occupant. More often he will be an object of suspicion. He will continue to be admired, respected, and damned. Looking toward his own future, the Senator from Idaho hopes that he will be able to do his thinking for himself. He is well aware that it is easier to coöperate, to play with the team, to compromise.

"It is far simpler to agree than disagree in Washington," he has said. "If there is an atmosphere in God's world that weakens a man's backbone it is the atmosphere of Washington. The deleting process is constant and drastic."

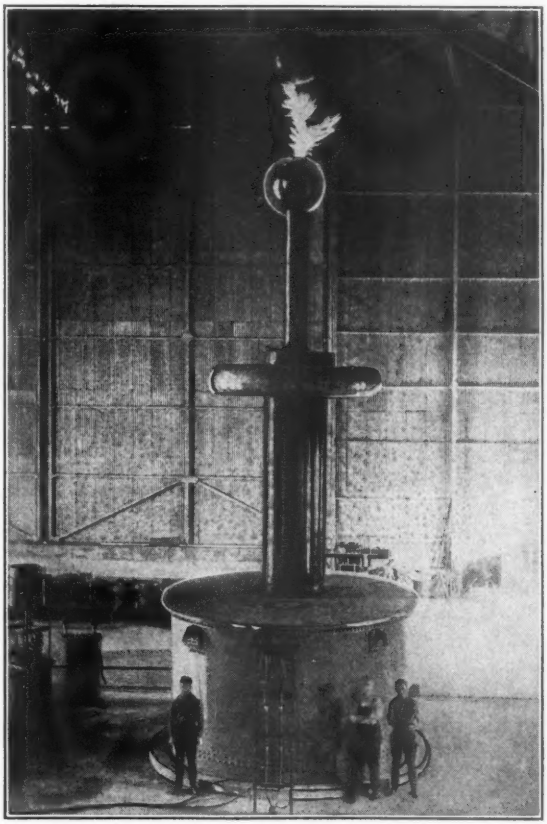
New Styles in Electricity

Useful Discoveries in the World's Laboratories

E. E. FREE

ELECTRICITY, like money, works most of its wonders by being unequally distributed. If every one had in pocket exactly the $9.60 that is said to be one average share of the world's cash, business would languish until the stimulating deficiencies and surpluses had been created anew. And if every bit of metal and wood and stone in the world possessed no more or no less than its average share of electricity we should ride in no trolley cars and read by no electric lamps. The subtle fluid that has become our familiar household slave is useful because there is more of it in the wires than there is outside of them; also because it will come out of these wires when and where we wish it to, instead of leaking out everywhere.

Electricity consists, the physicists tell us, of electrons —those tiny, invisible electric particles that every one has heard about nowadays because they are the miniature genii that inhabit and operate the vacuum tubes of our radio receivers. No scientist has ever seen an electron, and no one expects that he will do so. They are even smaller than the atoms of matter. Modern researches have shown, indeed, that electrons help to make up matter, just as they make up all that there is of electricity.



HELPS MAKE A MILLION VOLTS

If a perfect insulator were available such giant transformers as this would be unnecessary. With no leakage, many times a million volts could be produced by a much smaller apparatus.

When Benjamin Franklin flew his kite and brought down lightning from the clouds, proving it to be really no more than an electrical phenomenon of a vastness previously undreamed of, he really did no more than to provide a path by which a small army of electrons could trickle down from the clouds and make sparks between his Leyden jars. Every electric spark is merely a cloud of electrons rushing across some gap. Electric currents in

wires, the chief way in which we use electricity nowadays, are merely vast armies of these electric particles rushing through the wire under the urge of forces that we are only now beginning to understand. The control of these wire-filling electron armies, so that they will do our bidding and attempt nothing that we do not expect, is the chief task of electrical engineering.

Our ability to do this at all depends upon the existence in nature of certain materials through which the electrons do not like to pass. These substances we call insulators. The most important part of a city water system is not the water; it is the pipes. Just so, the one true essential of electrical engineering is not the mighty and spectacular dynamo or the miles of wire that carry the power. The real hero is the humble and grimy insulation that keeps the electricity inside the wires where it belongs and—no less usefully—keeps our careless fingers outside, where they are safe from being burned.

ELECTRIC WAVES

To keep electrons inside the wires of high voltage power lines, the wires are hung on long trains of insulators made of porcelain or other substances. One of these trains is here shown under test. The electric voltage provided was approximately one million volts.

The new styles in electricity with which the world's research laboratories so continually astonish us—things like television, electrical refrigerators, and that newest wonder, the "electric man," which can talk enough to answer the telephone—these are mostly no more than new ways of restraining the electrons and making them behave. The electricity is still the same stuff that careered around the world for millions of years as lawless lightning flashes and that Franklin took one of the first steps in taming when he trapped it with his kite.

Since then scientists have learned easier ways of getting electrons than to steal them from the lightning. One device, a potassium plate that gives off loose electrons when light rays fall on it, is now used to obtain companies and battalions and armies of free electrons, separate from the metal wires in which these tiny adventurers usually lurk. Another and frequently a better way is the electron-emitter used in the familiar radio vacuum tube, the heated filament at the center of the tube.

This filament is much like that of an electric lamp but is designed to emit as many electrons as possible instead of as many light rays as possible. When the atoms of the filament are hot enough some of the electrons that they harbor get excited and leave home. They fly out of the wire altogether. It is they who work the vacuum tubes for us, so that modern radio is possible. It is probable that these devices that divorce electrons from wires, so that mobile armies of the little workers can be provided in empty space, are des-

THE WORLD'S GREATEST ARC

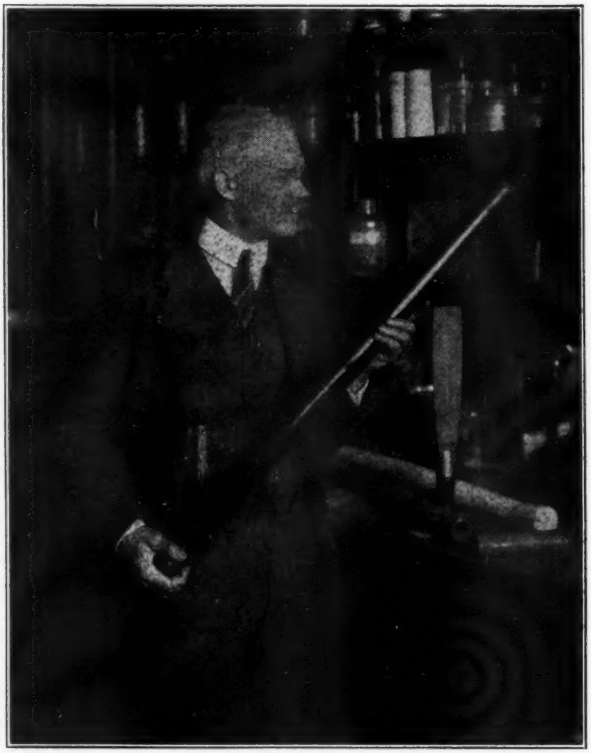
The arc consisted of an inconceivable number of billions of electrons flying between the terminals of the great electric machine.

tined to play as great a rôle in the electrical engineering of the next fifty years as the dynamo has played in that of the last fifty.

These tiny electrons are astonishingly plentiful. From an area of one of the new radio filaments no larger than a pinhead there escape each second more than a million billions of electrons. In a barely visible spark from the back of a cat there are so many electrons that if you were able to count them you would be counting for more than a million years. The numbers of the electron armies that pass each second through the heated filament of an electric lamp or through the motors of a street car or along the widespread transmission lines of a great superpower system are still more staggering.

In the problems of finding new ways of using electrons practically, their chief interest is not, however, their behavior in the free space inside a vacuum tube, but is how they affect the atoms of matter and how these atoms affect them. In the tiniest visible bit of copper wire there are billions on billions of copper atoms and still vaster numbers of electrons. Each copper atom is attended, in fact, by no less than twenty-nine electrons, all whirling madly around the central body of the atoms like excited dancers around a ballet master. In an inch of length of a copper wire so fine that it resembles an almost invisible hair are such vast numbers of electrons that if every man, woman, and child in the world ate one with every meal from now on there would be enough of them to last everybody for more than a thousand million years.

This mere number of electrons inside the matter of wires or other substances does not explain the practical good fortune that some substances pass electricity easily and are good conductors, while other substances pass it scarcely at all and can be used as insulators. It is not that conducting metals contain electrons, while materials like rubber do not. Rubber contains, indeed, just as many electrons per ounce as copper does. The difference seems to consist in the fact that the electrons of rubber have home-loving habits, while those of the metals are apt to be wanderers.



IMPREGNATED WOOD

It is possible to increase the insulating properties of wood by treating it with a special chemical material. The chemical, an insulator itself, fills up the tiny air spaces in the wood and prevents entry of water.

There was a time in human society when work was done and news was carried by what were called journeymen, traveling craftsmen that men to-day would be all too likely to call tramps. Soberer citizens settled down on farms, raised families, had money in the bank. The journeymen drifted, did a little work now and then, provided

amusement for the more cautious brethren who dared do nothing but stay at home. The tiny world of atoms and electrons inside a copper wire seems not dissimilar. Some of the electrons of each atomic family are restless. If we could squeeze ourselves down to the size of an electron and visit the amazing Lilliput inside a piece of copper wire we should observe not only the settled and sober atomic families, each of twenty-nine electrons, but we should find some tramps, too—extra electrons drifting about on their own and declining attachment to any of the fixed groups.

As journeymen brought the day's news before newspapers were invented, it is these loose electrons that, we believe, carry electric currents. They need not carry quite all of it, for even the soberer, stay-at-home electrons sometimes acquire a wanderlust and leave the family fireside, provided they can get substitutes to take their places and to do the atomic chores.

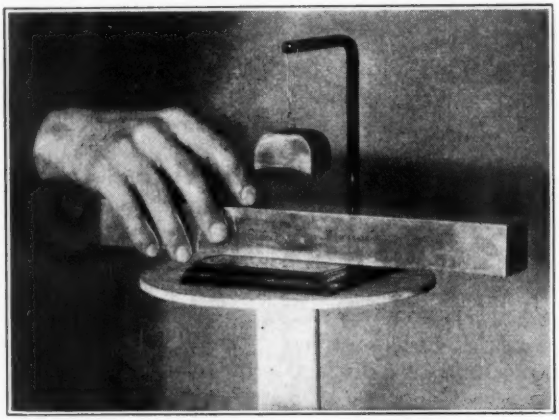
Suppose, for example, that you start an electric current in at one end of a bit of copper wire. This electric current consists of a swarm of electrons. These extra electrons do not themselves move all the way through the copper, a detached army avoiding all acquaintance with the countryside. On the contrary, many of them accept attachment at once, replacing some of the family electrons already there. These new wanderers, thus released for the journey, then join the marching army and go ahead until they, in turn, accept attachment to an atom and set free still newer wanderers, as they themselves were freed so short a time before.

The electrons that go in at one end of a wire will not be the same electrons that come out at the other end. But the same number of electrons will come out; they will merely have exchanged individuals on the way. It is as though Sherman's army, marching eastward to the sea, exchanged soldiers with each community that it traversed, arriving at Savannah with its number unimpaired but with each company composed of Southerners picked up along the line; each of the original Yankees having stopped by the wayside to take up the household routine of one of these recruits.

This applies to conductors, like copper and other metals. In insulators, like rubber or glass or mica, allegiances are not so easily rearranged as this. The electrons of the local families are less apt to change place with wanderers who drift along. The result is that if you force an army of electrons up against one side of a piece of rubber they stay right there. A very few may work their way into the rubber mass,

THE OSISO—A HELP TO THE DEAF

The mirror in the upper part of the instrument permits the observer to see sound waves corresponding to spoken words.



FOURTEEN TIMES ITS WEIGHT
The small cobalt steel magnet will support the solid steel bar after the two have been placed in contact.

like spies into a hostile population. But there will be no free exchange of places with the electrons of the rubber atoms; no general onward drift of electrons will occur; the "current," as we say, will not pass. Some such picture as this seems reasonably close to describing the differences in internal structure that provide the useful fact that some substances keep out the electron armies and thus prevent our wires from leaking electricity all over our houses and, more painfully, all over ourselves.

One of the things of which electrical engineers dream when they are optimistic is the possibility of a perfect insulator—some coating that would permit them to feed six or eight million volts of electricity into an insulated wire and have it come out safely at the other end. If any one tried that with present varieties of insulated wire the insulation would promptly explode. The electron pressure would be far too much for it. Indeed, the failure to generate ten or twenty million volts up to the present is not because knowledge is lacking of how to do it but because the insulation between the parts of the generating apparatus would break down and ruin the machines; also ruining, in all probability, any incautious engineers who happened to be near by. If some one could find a substance so impervious to electrons and so firm against their attacks that no electricity would pass through it under any circumstances, that would open another new set of styles in handling electricity and another new world in electrical engineering.

There is no probability that these particular new styles will be accomplished at once or without vast labor. All kinds of matter, even air, consist largely of electrons. All these electrons of matter are exactly like the electrons of electricity. They have merely accepted servitude to atoms. If one throws enough loose electrons at these bound ones, and throws them fast and frequently, the bound ones are apt to forget their contracts, desert the atoms to which they are attached, and allow matter itself to fly apart.

This perfect insulator, although it is still beyond the horizon of our scientific explorers, is not too much to dream about. The brief history of electrical engineering has already seen an enormous increase in the ease with which electric currents can be insulated and transferred safely from place to place.

C. E. Skinner, the engineer who was the first director of the Westinghouse Research Laboratory, said in an address not long ago that when he was a college student he and his classmates proved conclusively that electricity could never be transmitted to distances greater than five miles or at intensities greater than 220 volts. Time has proved them pessimists. Already the practical transmission distances exceed two hundred miles. Voltages as high as 60,000 volts have been used even inside insulated cables laid under the streets. Five times this voltage has been used for overhead lines, where wider spacing of the conducting wires is possible. And Mr. Skinner, once the pessimistic student, became the enterprising engineer who played one of the largest rôles in making these betterments facts.

Not long ago I asked S. M. Kintner, present director of the research laboratory

maintained by the Westinghouse Electric & Manufacturing Company, what he considered the chief essential for progress toward still better insulation and still more perfect transmission of electricity. He replied that the one essential is a man; some individual who will be content to think and dream about nothing but the interactions of atoms and electrons, until he has found out that basic secret of why the home-keeping electrons in the copper wire aid the free electrons to pass, while those in materials like rubber oppose them.

This is no child's play research problem, for quick solution and easy fame. It is a life-time job for some patient explorer. Perhaps even one lifetime would not be enough; and certainly many men, each expert in his line, must help the quest. This kind of research needs devotion almost of religious intensity. But fortunately science has never lacked devotees. Mr. Kintner will surely find, if he hasn't already, that single-minded searcher that further control of the electron armies makes so necessary.

Every one of the new electric fashions that engineers propose and persuade electrons to accept involves problems of this kind, although not always so difficult. One of them lies behind that familiar household utility, the electric iron. In this device electrons hurry out from the power wires and back again into them and are asked to produce, not light or motion, but heat. The electrons know only one way to do this. As they scurry through the coils of wire wound inside the iron they knock against the atoms of the metal in these wires. If enough electrons do this the atoms get hot. That, in turn, heats the whole iron.

The wire that is to be heated in this way must be of just the right metal. If it allows the electrons to pass through it too easily the electrons will not knock about

THE PHOTOELECTRIC CELL

This cell detects minute light changes and is therefore able to count the number of automobiles or persons passing down a street or to detect fire by "seeing" the slightest wisp of smoke.

the atoms sufficiently to make the wire hot. On the other hand, the wire must not respond too violently to the antics of the electrons and get too hot. If so, it will melt, and some housewife will mourn a burnt-out iron. To devise metallic alloys that electrons will heat up just enough but not too much has been, and will continue to be, one of the important duties of electrical research men, including those of the active laboratory over which Mr. Kintner presides.

Among the properties of electrons that are still fundamentally mysterious and therefore especially potent for the future is that of influencing one another at a distance. If a wire through which passes the electron stream of an electric current is merely brought near to another wire, without actually touching it, the atoms and electrons in the second wire are set into excitement—much as a human city might be by news of a hostile army's approach. This is perhaps the most important single fact underlying electrical engineering. It makes possible, among other things, the telegraph, the telephone, the electric dynamo, and the electric motor. One of its manifestations is magnetism, for the forces of magnetic attraction and repulsion, even in natural magnets like the lodestone, are now believed to be due to action at a distance between the electrons (or atoms) in the actual magnet and those in the body that it attracts or repels.

For this reason the science of magnetics must be one of the chief preoccupations of inventors searching for still newer electric styles. In this science Mr. Kintner, who asks for a man willing to spend his lifetime on insulators, has been fortunate to find an individual who will do just that for the secrets of the magnetic atom. Once in the laboratory of Professor C. H. Desch, the famous metallurgist of the University of Sheffield, England, Mr. Kintner asked where it was possible to obtain laboratory samples of the purest possible metallic iron. The best source, the Professor replied, was a man named Yensen, in Pittsburgh. Mr. Kintner laughed. Mr. Yensen was already working in the Westinghouse Research Laboratory. He was the man who had decided to make magnetism his life work; and the world's purest iron, fame of which had spread across the sea to Sheffield, was merely one of his many tools.

It is indicative of the broad spirit that animates not only Mr. Kintner's laboratory but virtually all the research laboratories of the great electric companies, that Mr. Yensen was encouraged two years ago to leave his workbench and his magnets in Pittsburgh and to go to one of the country's foremost research laboratories to study the inmost habits of the atoms and electrons inside his samples of iron and steel. The bait for scientific flies is neither honey nor vinegar but facts. Fact-collecting interludes like Mr. Yensen's season of academic research are incubators for still further discoveries of how electrons make small but powerful magnets out of near-by atoms of steel.

The electrical styles of the next century may use the free electrons in vacuum tubes more largely than to-day, and magnetic machinery less largely. But every one of the new facts now being learned so plentifully about electrons and atoms and electromagnetic waves is likely to find usefulness in the improved control of the electron multitudes that already serve mankind so well.

Germany and the Dawes Plan

Our Interest in Proposals to Settle the Reparations Total

HENRY KITTREDGE NORTON

FOUR YEARS AGO Germany was in a state of economic collapse. Defeated in the World War, she had been subjected to a political and military pressure by the Allies that meant certain ruin. The politicians who at Paris had promised their peoples to make Germany pay every cent of the war costs were driven by the logical force of their own illogical arguments to use every means in their power to coerce Germany into paying sums that Germany was quite unable to pay. The effort to meet the Allied demands forced down the value of the German currency, and each new demand meant a further drop. After the occupation of the Ruhr in 1923, this process reached its logical conclusion in the complete disintegration of the old German currency and the paralysis of German economy.

Then came the Dawes plan and its acceptance in 1924 by all parties concerned. The essence of the Dawes plan is that it fixes a definite amount that Germany is to pay in each year and enables her to pay this sum in marks to an officer known as the Agent General for Reparations. When the marks have been placed in his hands, Germany's task is completed. A Transfer Committee working with the Agent General is charged with the duty of transferring the marks to the creditor nations without depreciating the German currency.

The Dawes plan has now been in operation for four years. The results have been most gratifying from every point of view. The Allies have received their money exactly in accordance with the schedule each year. There has been no difficulty in the payment or in the transfer. There is no room for complaint on the Allied side. Germany, on the other hand, has once more become a functioning economic unit. With a population that has increased by nearly 5,000,000 since 1918, it has put all its laborers to work, with the exception of about 650,000 who are still in receipt of unemployment relief. Germany's production has reached pre-war figures and in many industries has exceeded them.

Can Germany, however, make the larger payments required in the future? Beginning with September, 1928, the payments under the Dawes plan reached the standard figure of $600,000,000 a year. This means an increase of $187,500,000 over the payment for the fourth year, 1927–8. All of this increase falls on the budget of the Reich. The maximum contribution of the German railways, German industry, and the transport tax was reached during the fourth year. In that year the government of the Reich contributed only $125,000,000. Next year it must contribute $312,500,000.

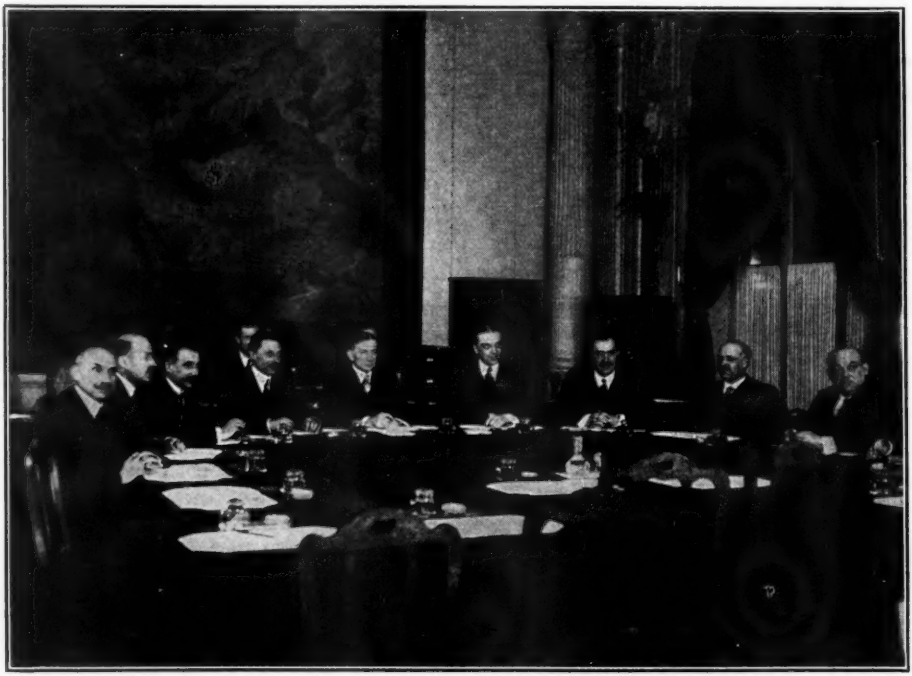
Certain revenues of the Reich are earmarked to cover this amount. These constitute the so-called "controlled revenues." These revenues during the past year have yielded more than double the amount necessary to cover their contribution to the standard payment. In fact, the German Government has recently reduced the rate of assessment of these revenues by 20 per cent. As the other revenues from railways, industries, and transfers are also yielding a considerable sum in excess of their contribution to the reparations payments, it may safely be concluded that, short of a serious economic depression in the country, there is no obvious reason why Germany cannot turn over to the Agent General the larger payments of the standard years as readily and as promptly as she has made the payments of the first four years.

On the face of things it would appear,

not only that the Dawes plan has served its purpose in restoring Germany to economic health and in securing to the Allies the largest practical payments on reparations account, but also that there is no reason why it should not continue indefinitely to do the same thing. There are, however, several aspects of the matter that cause concern for the future. These all relate to the fact that during the past four years Germany has borrowed abroad a sum considerably in excess of the amount she has paid in reparations during this time.

The statement is frequently made, sometimes carelessly and sometimes with forethought, that Germany has paid the reparations installments out of borrowed money. This is at worst a false, and at best a misleading, statement. A comparison may help to make the matter clear. If a corporation with a producing plant worth $5,000,000 issues bonds for $1,000,000, and in the same year pays a dividend of $500,000, it has not necessarily paid the dividend out of its borrowings. If the producing capital has been increased by at least $1,000,000, and the net profits on production are at least $500,000, then it has paid its dividend out of surplus production and not from the borrowed money. The increase of capital investment offsets the liability on the bonds, and the profits are left clear for dividend payments. This is true even if it uses part of the actual cash received for its bonds for the actual distribution of the dividends.

The financial course of Germany during the past four years presents such an operation on a large scale. Since the Dawes plan went into effect German borrowings have been approximately $2,500,000,000, as against a total reparations payment of $1,370,000,000. If, during this period, Germany has increased the total of her producing capital by more than the amount of the loans, then the reparations payments must have been made out of



THE FIRST MEETING OF THE DAWES COMMITTEE OF EXPERTS

Seated at the table in the Hotel Astoria, Paris, are, left to right: F. Flora and Dr. Pirelli, Italy; M. Alix and M. Parmentier, France; General Charles G. Dawes, president of the committee, and Owen D. Young, United States; Sir Robert Molesworth Kindersley, G. B. E., and Sir Josiah Charles Stamp, K. B. E., England; and Emile Francqui, Belgium.

surplus production. It is difficult, if not impossible, to measure with absolute accuracy the value of a country's producing capital. It is difficult from a ship at sea to measure the height of the waves above sea level. But even the casual passenger has no difficulty in concluding that the waves are substantially higher at one time than at another.

So with the amount of producing capital in Germany. It may be difficult to measure the exact amount of the increase in the past three or four years. But that there has been an increase, and that greatly in excess of the total amount borrowed abroad, seems clear. One of the largest of the German banks has attempted to estimate it in comparison with the production of new capital in Germany in 1913. According to these figures, Germany in 1913 produced new capital to the extent of nearly $3,000,000,000. For the past three years the average has been about $1,750,000,000, and during 1927 it ran close to $2,000,000,000. The total for the three years is more than $5,000,000,000. And this is over and above the $2,500,000,000 borrowed from abroad.

GENERAL DAWES IN BERLIN

The head of the Reparations Commission walks with the Belgian banker, Emile Francqui, to a committee meeting.

Accepting the fact that there is room for error in these figures, we may use them as an approximation to the truth. It thus appears that Germany is in the position of a corporation that has borrowed $2,500,000,000; that has paid out in dividends during the period $1,370,000,000 and at the same time has increased its producing capital by $7,500,000,000. In other words, Germany has produced the entire amount of the reparations payments, plus $5,000,000,000, which has gone into increasing her plant. She has further added to her plant with $2,500,000,000 of borrowed money. It is therefore quite inaccurate to say that Germany has paid her reparations installments out of borrowed money.

The cash received on loans has, however, been used to facilitate the transfer of the reparations payments to the creditor nations. This corresponds to the action of the corporation in using cash received on its bond issue to pay its dividends. Let us suppose that the corporation's plant is located in Chicago, that its bonds were sold and the receipts deposited in New York, and that the stockholders were also in New York. It would be the natural thing, then, for the corporation to use the money in New York to pay the dividends in New York, and to use the money in Chicago to increase the plant in that city. This would avoid transferring the cash both ways.

Likewise, in the case of Germany, the receipts from her foreign loans were deposited in foreign banks. Those to whom she owed money were also foreigners, and it was the easy and natural thing for her to use the foreign money to pay the foreign debts. As long as Germany can and does borrow money abroad in excess of the amounts of the reparations payments, she will continue to use this money to make her payments and keep her marks at home to make additions to her producing plant.

But it is contended that sooner or later Germany will reach the limit of her borrowing capacity and that no further

foreign loans will be forthcoming. Our corporation under parallel circumstances would simply have to arrange for the shipment of its surplus earnings from Chicago to New York for the payment of its dividends. But here the comparison with Germany breaks down. It would be useless to ship German marks to the creditor countries, because marks are worth nothing outside of Germany. They must be exchanged for foreign currency before they can be of any value to Germany's creditors.

Thus arises the "transfer problem." Ordinarily, between nations having different currencies, accounts are paid by the shipment of a surplus of goods or gold from the debtor nation to the creditor nation. Germany has not sufficient gold to pay her accounts in this way, and so far, since 1924, she has found it necessary to import more goods than she has exported. It is with an air of finality, then, that the question is posed: How can Germany pay when she can no longer borrow money abroad?

There is a great divergence in the answers to this question. One school of thought makes the reply that the transfer problem is all a bugbear; that there is in reality no transfer problem at all. The argument is that Germany in borrowing money abroad is simply refunding an outstanding debt. It would be as if our corporation, before it borrowed the million dollars for new plant, had already an outstanding indebtedness of $2,000,000. Let us suppose this indebtedness falls due in annual installments of $200,000 each over a period of ten years and is payable in New York. The company might, if it thought it profitable so to do, simply make a new loan of $200,000 each year to pay off that year's installment. It might simply refund its debt as it fell due. This is a common practice among large corporations. A great railway company rarely pays off its bonded indebtedness, because it finds it cheaper and therefore more profitable to borrow money at low interest on bonds and to use its own capital, on which it can earn higher returns, to develop its business.

The contention of the optimistic school is that Germany, in its foreign borrowings, is merely refunding its debt as it falls due: that it is borrowing from private lenders and paying its obligations to the creditor governments. The theory is that in the course of time all of Germany's indebtedness to the Allies will be paid off and Germany will owe a sum, which it will be quite able to carry, to private investors, and that this can be refunded as often as Germany desires.

The difficulty with this theory is that Germany's total indebtedness is not known. The Allies did in 1921 render Germany a bill for $32,000,000,000. But Germany has never accepted this and, as it is somewhere near one half of the estimated total wealth of the country, it may be regarded as far beyond the possibilities. Germany would like to fix the total payment at not more than $4,000,000,000. The Allies have thus far refused to become interested in so small a figure.

Yet all parties are anxious to have the final amount fixed and accepted, and the present contest is over the amount that shall be set for the total of the German payments. If the figure as finally agreed upon is in the neighborhood of the $4,000,000,000 minimum, there would seem to be no reason why the optimistic school should not be right. But if the final settlement is nearer the $32,000,000,000 maximum, it is greatly to be feared that their optimism is unwarranted. As the final settlement may be anywhere between these two figures it is well to consider the contentions of the pessimistic school.

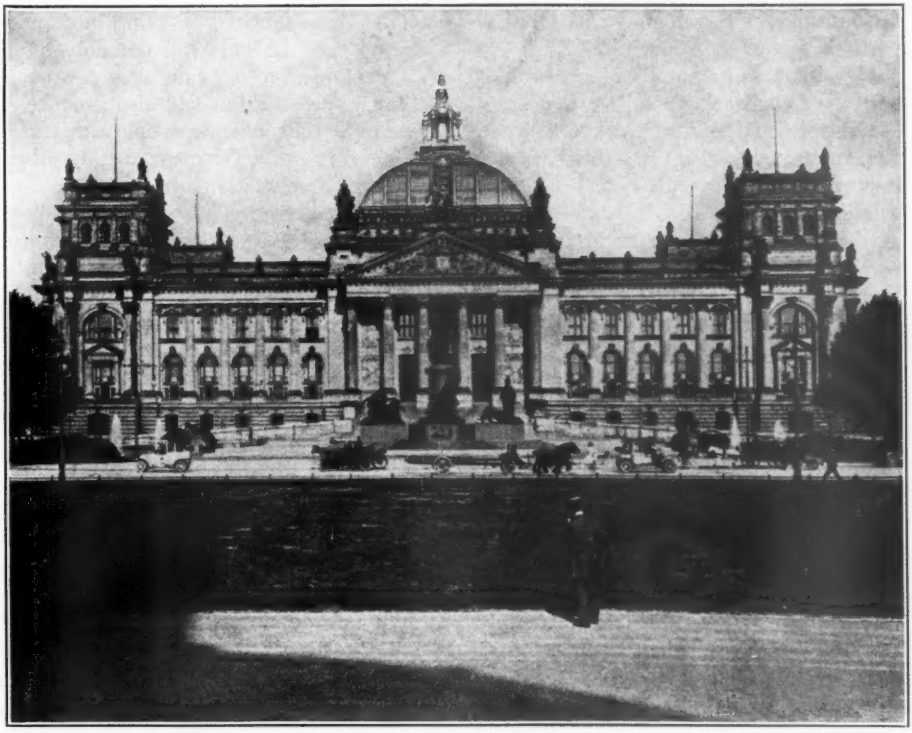
The disciples of this school are under the disadvantage of having made their pessimistic pronouncements ever since the Treaty of Versailles was in the making. Until 1924, events seemed to justify their pessimism. But since then the Dawes plan has delayed, if it has not prevented, the fulfillment of their dire predictions. They rest their case now on the assumption that German credit will soon be exhausted and that when this time comes Germany's creditors will no longer receive their annuities. Even if they concede for the purposes of argument that the requisite

number of marks can be collected and delivered to the Agent General in Germany, they contend that it will be impossible to convert these marks into foreign currencies without disastrously depreciating the exchange value of the mark. As this is forbidden by the provisions of the Dawes plan, they conclude that the payments must stop.

In principle, this would not upset the Dawes plan. The plan itself provides that in case the annuities cannot be transferred to the creditor countries the Agent General shall invest the funds in Germany —for Allied account, of course—up to a total of $1,250,000,000. After that figure has been reached Germany is not required to pay more than can be successfully transferred from time to time. The net effect upon German economy would be much the same as if she continued to borrow abroad as she has been doing.

But, continues the pessimistic argument, the failure to transfer the money to the Allies would immediately provoke a political crisis and a demand on the part of the creditor nations that the Dawes plan be jettisoned in favor of some new arrangement that would secure results more substantial from the creditor's point of view.

It may be conceded that, if the transfer of reparation payments should cease entirely, a crisis would follow, and that political clamor in the creditor countries would probably precipitate new demands. But the other assumptions of the pessimistic school are perhaps not so well grounded. It is, of course, possible for the German Government to prohibit all further borrowings abroad and thus greatly restrict this means of converting German marks into foreign currencies. However, Germany has already tried to prohibit foreign loans except for constructive purposes. The result has been considerable "bootlegging"



THE REICHSBANK

This building in Berlin houses the national bank of Germany, where is administered the payment of reparations.

of capital by means of inflated credits and otherwise. But even if it were possible to put an effective stop to borrowing abroad, any German Government would think long and earnestly before deliberately taking action the almost certain result of which would be to take the reparations question out of the hands of financial experts and deliver it once more to the tender mercies of hostile politicians.

Short of such action by the German Government, there seems little reason to expect an abrupt and total cessation of German borrowing abroad. Foreign lenders may become more exacting, and it may become more difficult for Germany to borrow as liberally as she has during the past three or four years. This would cause a proportionate diminution in the rate of expansion in Germany and cut down the amount of foreign exchange available for the Transfer Committee. The volume of available foreign exchange, however, can be reduced considerably before it would seriously affect transfers, for the German mark has steadily appreciated until it is now well above its par value as compared with the dollar or the pound sterling.

Even if the diminution of foreign loans to Germany should reverse this tendency, it would have several effects before it would prevent the conversion of German marks into foreign currencies. *First*, it would decrease prices in Germany and thus increase the ability of Germany to sell its goods in foreign markets. *Second*, it would normally inflate prices in the foreign markets and thus increase the demand for imported goods, including goods from Germany. *Third*, this would increase the demand for marks on the exchange market of the world. Whether it would increase it sufficiently to take up the total of each year's reparations payments cannot be demonstrated except by actual trial. But to state conclusively that the transfers will come to an abrupt halt requires as reckless courage as to state conclusively that there is no transfer problem at all. Undoubtedly the truth lies somewhere between the two extremes —just where, only the actual results can show.

These questions—whether Germany can pay and whether payments can be transferred to the creditor countries—have been the chief points of discussion in foreign countries. But many Germans have concerned themselves with another question that is to them quite as important. Even if Germany can for the present pay $600,000,000 a year, and even if this amount can be transferred, will not the result sooner or later work a disruption of Germany's economic and social structure?

The argument proceeds in this manner: The payment of $600,000,000 a year to foreign countries is a drain on German capital to that amount. Germany has no surplus capital to export. On the contrary, she needs capital so badly that she has imported it in large quantities at a high rate of interest. Her net annual surplus production is not sufficient to provide for her own capital needs, let alone sending $600,000,000 abroad every year. The result of such an exportation must be to depress the German standard of living more and more each year. This will not only limit the home market and thus slow down the economic process, but will also produce a discontent that will increasingly threaten the stability of the German state. In other words, not only Germany may lose the power to produce the money for the Allies, but at the same time her people may turn to Bolshevism to escape an intolerable situation.

I doubt if there is any large element of insincerity in this contention of the Germans. It is a natural reaction to the pressure that they feel in being coerced into the payment of a heavy penalty for losing the war. Yet it is not easy to accept this argument without qualification. In the first place, the growth of German capital during the past four years, which has already been mentioned, would indicate that the economic situation in Germany is rapidly improving.

All the figures compiled by the German statistical office, German banks, and other organizations in an effort to make reliable estimates, indicate not only that German economy is undergoing a healthy development, but also that this develop-

ment is sufficiently rapid to take care of a large amount of new housing and other capital investment necessary to provide for a population growing at the rate of approximately 500,000 a year. Du ing the past year Germany has actually put to work between 650,000 and 700,000 more laborers than were employed a year ago. She has not, of course, had to pay $600,000,000 in any previous year, but the indications are that, if her present economic activity continues, $600,000,000 will be no more serious drain upon her finances than the smaller payments have been in the past.

An item in the German budget lends appreciable support to this view. If we take the total appropriations of the Reich, the state, and the communes, we find that in 1913–14 the appropriation for "education and social welfare" was $423,000,000. In 1925–26, the appropriation under this head was $1,227,000,000. It is difficult to quarrel with money spent for educational purposes. But the German educational equipment before the war was considered one of the best in the world. To continue the appropriations in amounts corresponding to pre-war figures could meet with no legitimate objection. But the increase in this item is expended largely for health insurance, life insurance, burial insurance, unemployment insurance, and similar items that, however desirous in theory, are in a very real sense a luxury.

No other great nation has so elaborate a system of financial benefits for its working classes as Germany. There might be justification for this if the wages of German laborers were disproportionately low. Even then it would be the most expensive way of paying higher wages. But as a matter of fact the German laborer is comparatively well paid. Wages in Germany are probably as high as in any European country except England. In addition to that, the German laborer receives the benefits of this welfare appropriation, the largest item in the combined German budget. About one third of the income of the German governments is expended under this head of "educational and social welfare." Its relation to reparations payments appears from the fact that this item has been increased since 1913 by more than $800,000,000 a year, or one third as much again as the total of the standard reparations payment.

ON VACATION

S. Parker Gilbert, Agent General for Reparations, in Washington with Mrs. Gilbert. He assumed his important duties at the age of thirty-two.

In this comparison the American people have a special interest. Every scheme for the settlement of the reparations problem revolves about two items, and both of those items affect this country. One of these points is that the Allies insist that before they will accept a final settlement Germany must "commercialize" her debt —that is, she must sell bonds in the world's financial market and turn the cash over to the Allies. The Allies demand that the amount of this cash be sufficient to settle their debts to the United States. As there is grave doubt about the possibility of Germany's being able to sell even the minimum of four billion dollars' worth of bonds to private investors, this means that the American people would have to reduce their claims upon the Allied

countries by three or four billion dollars and at the same time advance the necessary funds to pay themselves the balance.

But if this is done it should be done with the full realization of the fact that we are selecting Germany out of all Europe as the beneficiary of our generosity. The Allied countries have already practically balanced their war-debt payments by receipts from Germany, and if both items are canceled the tax burden on them would remain exactly the same. Germany alone will have her burden lightened at our expense. And there is no serious contention even in Germany that the burden of taxation in that country is greatly out of proportion to that in the Allied countries. In other words, when we are asked to cut down our claims upon the Allies in order to facilitate the final settlement of the war-debt and reparations question, we are asked to increase our own taxes for the benefit of a Germany that, without overtaxing, has already demonstrated its capacity to carry the Dawes load of $600,000,000 a year, to spend in addition $800,000,000 a year on expensive social benefits, and at the same time to increase its producing capital by some $5,000,000,000 a year.

This situation warrants at least an element of caution and close thinking before we accept the additional burden of taxation that the present settlement schemes would place upon us. Yet it by no means concludes the matter. There is an aspect of the German argument that has as yet hardly been fully appreciated even in Germany. The chief advocates in Germany of German performance of her obligations under the Treaty of Versailles and the Dawes plan have been the Socialists and the other parties of the Left Wing. Yet it is these same parties who joyously authorize expenditures for social benefits. If the economic situation should take a turn for the worse, the Left wing might have to choose between discontinuing its social benefits, with disastrous results at home, and discontinuing the Dawes payments, with disastrous results abroad.

While there is no element in this situation that places any obligation on the American people materially to increase their taxes in a doubtful effort to relieve Europe of a burdensome situation, there is an obligation on the Allies to give prompt attention to one phase of the question. Whatever doubts there are as to the future of the Dawes plan would be substantially removed if the total amount of the German indebtedness were agreed upon. The Allies have refused to reduce their bill of $32,000,000,000 until they receive some definite assurance of immediate payment of a smaller sum. This is understandable, though the continuance of the Rhineland occupation, in the face of Locarno and the record of German performance thus far, is a quite unwarranted measure of coercion. The reluctance of the Germans to agree upon a figure larger than $4,000,000,000 is equally understandable, though they must, and probably do, recognize the necessity of considering a larger figure.

The chief barriers to an equitable settlement of the German reparations problem heretofore have been the bargaining avidity of all the European nations concerned, and the hope that a wealthy America would pay off whatever difference there might be between the figures on one side and those on the other. The recent action at Geneva that looks toward the establishment of a new international commission to investigate the present status and to recommend a suitable settlement, would indicate that the hope of American largesse was fading.

It is hardly to be expected, however, that the European nations will settle the matter among themselves without making a final effort to draw the United States into some sort of an agreement that will be to their advantage. Poincaré's speech in Savoy was a bugle-call for such an effort. If that effort is made, the American people will be fully justified in demanding that they be shown very clearly that the proposed agreement is to *their* advantage also. There is ample opportunity for European statesmen to make an equitable and workable settlement of the reparations issue without their demanding that the United States foot a large part of the bill.

The Long Suffering Student

The College Youth Finds Himself Better Off To-day than Yesterday

CHARLES FRANKLIN THWING

THE COLLEGE STUDENT of to-day, like the college student of yesterday, is a member of a democratic society or of a social democracy. But be it at once said that he is more of a social democrat than was his brother of the earlier time.

The principles and methods of social democratic equality are more regnant in the year 1928 than they were in the year 1878. The increase in the number of individuals in the college is accompanied by a decrease in the number of individualisms. Similarities are more abounding in the present college groups than are eccentricities. Fashions in clothes are only a symbol and sign of likenesses in thought and behavior. Academic equality is in the saddle. Students shirk both superiority and inferiority. If they do not shirk superiority, they are rather eager at least to avoid its manifestation. Uniformities rule. "Yes, I have taken that prize. But don't tell anybody." Humility of spirit is alone excelled by modesty of conduct.

But in the deeper probing of our comparative problem, social likenesses are soon seen to give place to personal differences. For, to begin with the beginning, the physical bodies of students at once form a basis of comparative discriminations. The health of students is the subject of a care more careful, and of a devotion more devoted and wiser—quite unlike the apparent carelessness and official indifference of an earlier time. Every large college has its bureau or division of health, and every small college has its doctor. Colleges as unlike in environment and condition as Williams and Harvard have their hospitals—hospitals properly equipped for both surgical and medical service.

Such opportunities and advantages are constantly used by students. Their function and purposes are of course curative and, what is far more important, preventive. Of course the gymnasium and the playing fields represent a permanent condition for health, equipped with competent groups of directors and coaches. The great change, however, is found in the attention that colleges are paying to the mental health of students. For the mental ill health of students is more common, more serious, more fundamental, than is the sickness of body. Colleges are becoming far more solicitous for this complex side of the student's life. This solicitude arises in no small part from the increasing knowledge of the broad field of psychology.

Though the supervision of and care for the body have become more intimate and constant, calling out appreciative responses, yet the responses made to the intellectual interests and powers of the students show no such increase. Students are unconsciously adopting the biological method of intellectual growth, and consciously neglecting the method of growth by hard continuous study. The normal number of hours of intellectual labor done in the college has in fifty years been reduced in about the same proportion as it has in the industrial plants.

In the former time ten hours a day, sixty hours a week, was not exceptional for the student. To-day the forty-eight hour week in the college would represent the higher and severer standard. Some would say that six hours a day is normal: two hours of recitation, conference, or lecture, and two hours of preparation in reading or writing for each exercise. The problem of the amount of study is, of course, both quantitative and qualitative. The intensity of mental application is at least as important as the duration of application. The question is, of course, a very individ-

ual one. It is also exceedingly complex. But for one, I do lament the decline in the hard, close, continuous working of the student.

My sorrow is made the greater by reason, at least in part, of the broader, more diverse, and more agreeable program of studies that is set before the student. A simple examination of the catalogue of any college, a simple examination of the courses offered in any department, provide convincing evidence that the program has become broader, more diverse, and more agreeable.

The revolution wrought in the knowledge of the natural world is incorporated in the scheme of studies offered the student—schemes covering the chemical, physical, geological, and biological sciences. The changes are fundamental. But changes hardly less fundamental are wrought in studies linguistic, economic, mathematical, historical, social. The scholastic wealth now set before the student is simply incalculable. He is made the potential possessor of riches of which his father or grandfather could never dream.

For the student this general enlargement of studies has been united with the need, a keener need indeed, of concentration: of concentration on certain subjects or groups of subjects. If the student knows less of *all* subjects than in the former time, he certainly knows more of certain groups of subjects. The relation of these groups of subjects to one another has been well interpreted and well controlled by college authorities. Intellectual breadth, which carries along with itself the peril of intellectual superficiality, and intellectual concentration, which carries along with itself the peril of narrowness, have been well adjusted to each other.

The student becomes a student in all subjects and a scholar in some. Choosing his vocation at an earlier age than did his father, he elects studies that specially fit him to take up his professional preparation. For medicine he takes chemistry, biology, and physics; for law, history and economics; for theology, philosophy and psychology. Through such concentration he gains in power as well as in special knowledge. Knowing that all studies aid in every professional equipment, and knowing, too, that he is a citizen and an individual person, he appreciates the value of studies that seem unrelated to his future. He thus realizes that no opportunity should be neglected, no advantage wasted. He thus becomes an academic miser, or a scholastic power house.

From the student as an intellectual being it is easy and natural to pass over to writing of him as a moral and religious being. For the student is a moral being; and he is a being quite as moral as was his brother in the earlier time. I am indeed inclined to think that he is a better moral being than he was when I was an undergraduate. He has a clear idea of what fundamental morality is. He knows the perils of the infraction of high ethical standards. He recognizes the worth and even the glory of observing those standards. To the one vice to which young men are peculiarly tempted he is less subject than were his forbears. The current standards of health aid him in resisting appetite. Constant and hard physical exercise adds to his strength. Sexual mysteries give less allurement, for the mysteries have become less mysterious. If the moral commandments are less commanding, the damnable foolishness of indulgence has become more emphatic and directive.

Regarding the prevalence of intemperance in drinking, opinion is divided. But I wish to say that intemperance among college men is becoming far less common. My observation covers more than fifty years. Of course, I confess that other witnesses bear contradictory testimony. I hear also, be it said, the current tales of the hip-pocket flask and of unseemly behavior at parties. Let no one seek to deny facts that, however sad, are still facts.

But taken all in all, in country colleges and urban, in institutions large and small, intemperance has, in the last fifty years, and in the last ten, distinctly lessened. College students, both individually and as groups, are usually sober. Of course they are. Reports coming to me, indicating a lack of soberness, apply largely to general social functions and not to college parties.

Of course the college man of to-day smokes too much. This matter belongs perhaps rather to a paragraph on hygiene than to one on morals. Formerly, smoking was interpreted as a question primarily of morals and secondarily of hygiene. It has now become a question primarily of hygiene, and secondarily, even if at all, of practical ethics. Yes, the college man (and the college woman) smokes too much. Any smoking, indeed, is bad for the college man. For the testimony of doctors is that no man should smoke while he is growing; and the student is growing in every year of the academic four. Any smoking is bad for youth, but smoking in the degree that it is indulged in by the student is especially bad; bad indeed to a degree that this growing and independent college boy does not and perhaps cannot appreciate.

The college man is still fundamentally religious. Of course he is. Most men are fundamentally religious. But, not to be content with such a platitude, let me hasten to say that he is less inclined to declare his faith than was his older brother. He hesitates to accept the historic creeds, even one as broad as the apostles'. His articles of belief are based less on ecclesiastical covenants than on the four gospels, and perhaps less on the four gospels than on a philosophy that, under the guidance of the professor of psychology, he has worked out for himself.

He meets the crisis of the skeptic of having doubts regarding the realities of religion. He fights his doubts. In and from the fight he gathers strength—religious, theological, ethical, metaphysical. He comes out of the battle victorious. Of course there are students to whom and in whom the skeptical mood is characteristic. Doubts vanquish their faith. But the typical college man is a man of a religious belief, broad yet firm, fundamental yet flexible, personal and well-buttressed. The result is a treasure that he guards with care. The result is more than a treasure, it is a fighting and glorious force for his life.

But a direct, positive, and exterior change has occurred. This change represents that institution of religion known as the college chapel. The change is a change not in the fact of a daily religious service. The change relates rather to the abolition of the requirement of the attendance of students. That requirement is as old as the chapel service itself; and that service is as old as the oldest college. Be it said, however, that the requirement has seldom been made an integral part of the organization of the state university. It has, however, been made an essential and necessary part of the daily life of the privately organized college.

The movement for the abolition of the requirement, begun more than a score of years ago, has become somewhat general. The special reason for the spread of the voluntary method is found in the unremunerative character, for students, of the service. It has too often been made formal, deadly, and deadening. The students, therefore, have revolted against it. For certain reasons students were justified in their revolt.

The members of the faculty, or whoever led the daily service, should have made that service intellectually quickening, morally strengthening, and of religious vitality. They did not succeed in this high and hard quest. In most colleges the service is still maintained. The service has become of greater worth to those who do, of their own preference, attend, but the number is small. The chapel represents an elective privilege, and the students do not elect.

Respecting neither his religion nor his ethics is the student gifted with enthusiasm. In fact, enthusiasm is neither a characteristic grace nor a constructive virtue. Rather the principle, *nil admirari*, he accepts. He is indeed an embodiment more of calmness than of scorn or indignation or exultation, of intellectual discrimination than of emotional outpourings, of reasoned judgments than of impossible loyalties, of legendary traditions than of self-sacrificing initiative. In even the occasions of athletic victories he has lost much of the vain hurrahs, of the shoutings and of the tumults of a decade ago. But, be it at once said, enthusiasm for scholarship does seem to be increasing, even while the enthusiasm for athletics

seems to be declining. In the pool of honors and preferences of many graduating classes, the Phi Beta Kappa "key" is preferred to the letter. The preference for the "key" seems to be deep as well as general.

In respect to certain material concerns are found changes as great as, or greater than, the other changes that I have already sought to interpret. The expenses of the student have increased—vastly increased. The fee for tuition, the rent of rooms, the price of board, have doubled or more than doubled. Four hundred dollars as the annual fee for tuition has now become as common as was $150 two decades ago. The cost of the incidentals, too, shows a similar or even a greater increase. The man who spent five hundred, or a thousand, or fifteen hundred dollars, would now normally be spending twice these sums, and that too without any more extravagance in the later than in the earlier time.

The increase in the charge for instruction is justified and more than justified. For college teachers should receive far larger salaries, both for their own sakes and for the sake of their successors. The reason for the increase in stipend, also, is fundamentally founded on the proper wish permanently to attract into professorships an abler type of the scholar and of the teacher.

The element of heavier cost is joined to the very personal matter of self-support in college. A larger proportion of students are now earning a whole or a part of their expenses than at any preceding time. The proportion is not far from one half.

To earn all the cost of an education while getting an education is a task altogether too hard. For most men such laboriousness eventuates in one of three results: Either the education of the student suffers, or his health suffers, or both his education and his health suffer. To earn money in advance, or to borrow money, if it be possible, is a wiser plan. Earning a part of the expenses is quite a different matter from earning all of them. The wisdom or unwisdom of partial self-support depends on the intellectual and physical ability of the student, on the amount necessary to earn, on the kind of work available, and on the rate of payment. But, in addition to the facilities for self-support, every college has scholarship or loan funds that are available for students able in brain, lean in purse, and giving promise of usefulness. The rise in tuition fee, and the increase of other expenses, should not for an instant turn the youth who has small monies and large abilities away from the college. The colleges are determined more than ever to keep their gateways wide open to deserving men.

With the cost of education is, for certain students, to be bracketed the question of the fraternity. For the cost of membership in a good fraternity is, for some men, prohibitive. The fraternity is a natural development of undergraduate life. It represents the social group, the personal side of that life. Indeed, it represents that side too strongly or exclusively; for it should stand for the scholastic side as well. The cost has inevitably increased in recent decades. The college fraternity is not, however, to be eliminated. It is rather to be nourished: its excellencies to be developed, its weaknesses cast out, its perils removed.

On the whole, fraternities are building houses that are altogether too elaborate, and furnishing and conducting these houses with a luxuriousness that many men cannot easily afford. It is a beautiful and happy life that the fellows live in this environment. The fellowship is captivating and charming. To many members the fellowship is altogether too consuming of time and of scholarly interests. Personal powers and values, which should be disciplined and enriched by solitary study, are half wasted in the charms and inspiration of talk. It ought to be said that, on the whole, the scholarly rank of fraternity men is lower than is the rank of men who are not members of the chapters of fraternities.

But there is an organization of which every student is a member. That organization is his class. To enter college through the same gateway, to enter college at the same time, to leave college at the same

beautiful commencement, is a glorious and exultant fact. It is a fact belonging to tens of thousands of students, graduates and undergraduates. To some it is a lasting memorial, to some it is a pleasant experience, to some it is a future ambition. I already see banners hung out bearing the futuristic figures, "1932." "The class of 1932" will be a rallying cry for the next four years in the colleges; and after its graduation it will be a glorious symbol and sign for more than half a century to grateful graduates. The class still keeps its early and constant significance as the chief organization in academic life and annals.

The relation of the college class to the faculty, in the course of two generations, manifests a vast improvement. Rebellions of a class to academic rule and authority have become less frequent. Organized oppositions to individual teachers have largely passed away. Tricks, usually silly ones, are now seldom perpetrated. Such annoyances as bringing alarm clocks into a lecture room and setting them off at a prearranged signal are not suffered. The ideal of a college class as a body of young gentlemen—not too gentlemanly indeed—is regnant. Members of faculties frequently request students to confer with them about the value or valuelessness of their courses. Coöperation has taken the place of antagonisms, confidence of suspicion, and comradeship of remoteness. The undergraduates of both Yale and Dartmouth have within two years made thoroughly helpful interpretations of important elements respecting instruction and academic administration.

One cause, not the only one indeed, of this improved fellowship is found in the systems of student self-government that are established in many colleges. This self-government bears different names, as students' councils or students' conferences, but whatever be the names used, the purpose is the same—to aid students in their community living. The method lies in conferences of students with one another and with members of the teaching staff. The field represents the concerns that in some respects are of minor, in other respects of major, importance. Among the first of such systems was one that was introduced into the University of Illinois in the ninth decade of the last century. The growth of the system is one of the happy facts of recent academic history.

As I bring to a close this long interpretation of the differences between the college man of to-day and the college man of yesterday, there emerge at least two respects in which no change has occurred.

First, the college youth is still the college youth. He represents a highly selected group. He is a union of contradictions. He is intellectual yet emotional; he is emotional yet conscientious; he is careless of details yet insistent on the fundamentals of character and of being; he is not distinguished by his formal courtesies but he is emphatic in his observance of the cardinal virtues; he is a happy being, yet he knows what lonely days are and he has experiences sad and disconsolate; he is a member of a group, yet he lives in himself; he is selfward in his thinking and feeling, but he is seldom self-content or self-satisfied; he lives in the present, but he is an interpreter of the yesterdays and a prophet of the to-morrows.

Second, his mood and attitude toward life may be summed up in the word "expectancy." The college man expects to give his best—his best in mind, heart, conscience, will, personality—to life. He expects to work hard. He expects to do his duty, and he demands that he be allowed to be his own judge of what his duty is. He expects to enter into a life and into a changing civilization that is dynamic, and not into a life and a civilization stabilized or static as was the one that his father knew. He expects that the service that he gives to life is to be inspired by the highest motives, to be wise in its methods, to be filled with the noblest devotions, and to be useful to his generation. He expects to meet life's experiences in the spirit of reasonableness and with a cheer; and to conclude those experiences with a smile on his face, with a song of gratitude on his lips, and with a sense of humble self-contentment in his heart.

My Mystery Ships

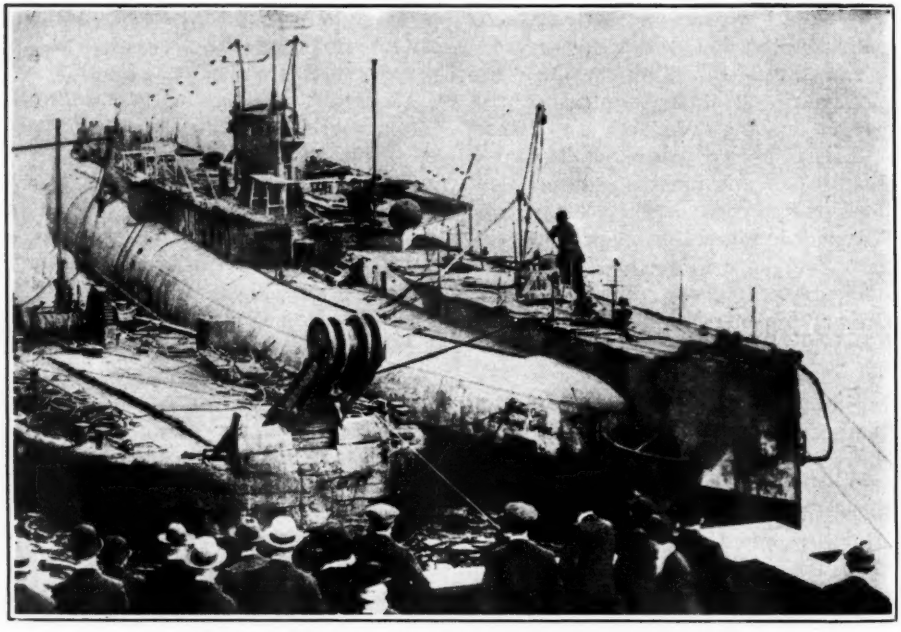
Some Unwritten War History Now Told By

REAR-ADMIRAL GORDON CAMPBELL, V. C., D. S. O.

AFTER THE sinking of *U-68* and our brief visit to Queenstown we continued to cruise around the southwest and west coasts of Ireland. We had not long to wait before encountering another submarine. One was reported off the Orkney Islands on April 13th, and we set off to try to intercept it.

The weather at this period was none of the best. On the 15th a heavy Atlantic swell was rolling in after a stiff gale, a heavy mist hung over the sea, and the visibility was barely two miles. At 6:30 P.M. we were steaming northward, in nearly the same position as when we engaged *U-68*. Suddenly a large ship was seen in the mist on our starboard beam, steering in an opposite direction; her nationality could not be made out, though she appeared to be of foreign build. As we were looking at her a submarine was sighted on the surface between the two of us, but closer to the other ship—which turned out to be the Dutch steamer *Soerakarta*—than to us.

The submarine hoisted a signal, which we could not read, owing to the weather conditions, so I hoisted a pendant meaning "Signal seen but not understood." I had guessed—rightly, as I later ascertained—that the signal ordered us to send our papers on board. In any case, I assumed it to be a signal to stop, so the engines were stopped and steam blown off.

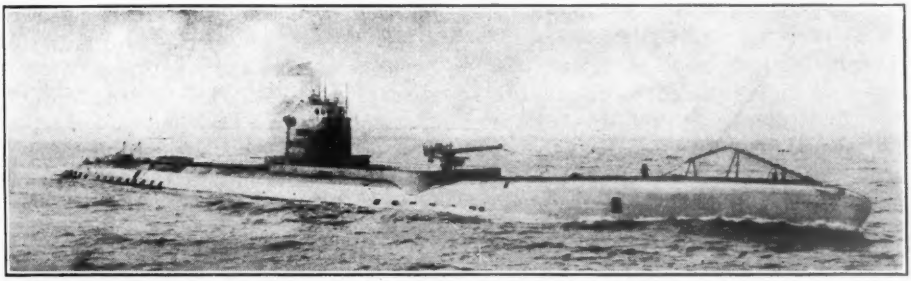


THE COMMERCIAL SUBMARINE "DEUTSCHLAND"

The entire fleet of English decoy ships from Queenstown was used in an attempt to intercept her homeward voyage from the United States.

This was the most visible outward sign I could give that we had complied, as it was too thick for him to judge by eye. I jogged ahead every now and then, however, for we were lying in the trough of the swell and rolling heavily—a thing we wished to avoid, as it would make firing too difficult. In the meantime I hoisted the signal, "Cannot understand your signal."

At the same time the bridge boat was



A GERMAN SUBMARINE

turned out, and Lieutenant Smith, having borrowed my precious hat, assumed the rôle of Master and was about to take our "papers" over to the submarine, the idea being to allay suspicion as well as to entice the submarine nearer. This was one of the drills we had rehearsed, as at this period of war it frequently happened that a ship was ordered to send over her papers. The "papers" consisted of a dummy bundle I kept in the chart room.

The submarine was probably just as unable to read our signal as we were his. That I couldn't know for certain, as my flags were high up and free from being masked, as his were by his conning tower. I had in mind that he must also be anxious to carry off a double event. Our boat was nearly in the water when he fired a shot at us that whistled overhead; this was ten minutes after he had been sighted on the surface. In the still air the sound of the gun seemed very close. Unfortunately, one of my gun crews thought we had opened fire and that for some reason they hadn't received the order; in consequence they let the enemy have it.

My hand thus forced, I was obliged to give the general order to open fire, which brought all the guns into action. The submarine was full length on the surface, but about 1,000 yards, away; so, with the mist and swell, shooting was extremely difficult. Twenty rounds were got off from the 12-pounders, and a number from the 6-pounders, Maxim, and rifles. The shooting was good under the circumstances; two distinct hits were seen in front of the conning tower, and a small explosion took place—probably of the ammunition that was at his gun. He was obviously damaged, as he appeared to lie at an awkward angle before submerging.

We steamed to the position where he had submerged, but there was nothing to indicate whether he was destroyed or only damaged. Two depth charges were accordingly dropped, but no oil came to the surface of the water.

I remained in the vicinity for a couple of hours—long after the *Soerakarta* had proceeded—hoping that if he were not destroyed he would come to the surface at dark, which was now setting in. If undamaged, I did not think he would let two steamers go scot-free. I was rather inviting trouble by stopping so long after our identity as a man-of-war had been disclosed, for he might have torpedoed us; but I felt certain we had at least damaged him, and should he come up "out of action" we didn't want to miss the opportunity of insuring his destruction. This submarine is supposed to have gone on down to the mouth of the Channel and attacked other ships. Why he didn't torpedo us I don't know, but nothing

further was seen or heard of him in our vicinity.

In the meantime the armed patrol trawler *Ina Williams*, hearing our depth charge, had come up. I sent her to board the *Soerakarta*, to make sure I had not damaged her in any way—she had been almost in the line of fire—and also to obtain information as to what she had seen, as she had been closer to the submarine than we had. The Dutchman reported that the submarine had been struck by our second shot and had sunk by the stern; that the German crew who were manning the gun had been unable to regain the conning tower and had gone down with the submarine; and that the submarine had fired a torpedo at us that had gone wide.

The following account appeared in a Dutch paper on April 24th and shows what it all looked like from aboard the *Soerakarta*:

> The crew of the Dutch steamer *Soerakarta*, which arrived yesterday at Rotterdam from Java, were spectators off the English Coast of a memorable war incident. One of the members of the crew related the following: "We were suddenly compelled to stop by a German submarine. The Captain obeyed the order, and the Germans told us to come to the U-boat with the ship's papers. But scarcely was our boat let down in order to take the ship's papers to the submarine when something tremendous occurred. It was still foggy, and we suddenly saw in the obscurity a gray ship loom up. Sails on the mysterious ship were pushed aside, and at the same time some guns vomited a hellish fire. The German submarine had caught sight of the masked ship probably sooner than we, for it had launched a torpedo—which, however, went wide. Hit by the terrible fire, the German submarine sank in the deep. This war drama was over in a very short time."

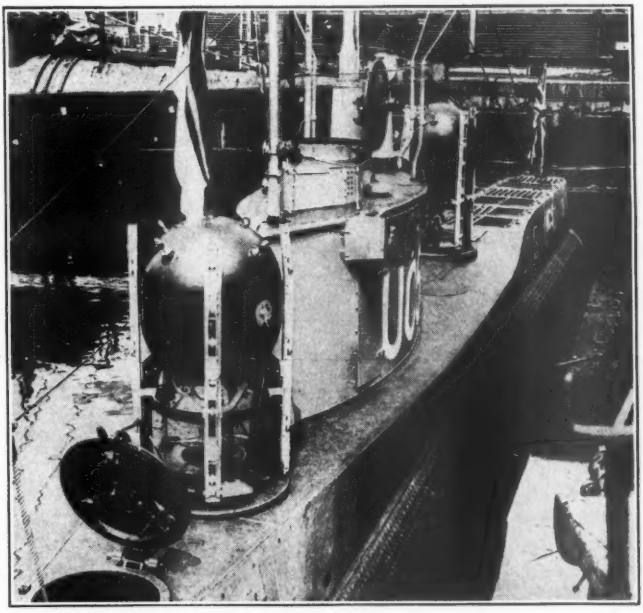
Shortly after this the German authorities admitted, according to the Dutch paper, that the submarine engaged in stopping the *Soerakarta* was struck by shots from the British ship, but was only slightly damaged.

There are probably some who are quite positive that the submarine was destroyed, but the records show that the submarine got back all right. To what extent she was maimed, or whether any casualties were suffered, I do not know.

The next few months were comparatively uneventful; I think the submarines had been recalled for action in the North Sea. But early in August we got sudden orders to proceed to Lough Swilly and had to struggle up the Irish Sea in one of the dense fogs so frequent that year. At this time the German submarine *Deutschland* made her famous trip to New York, and the Commander-in-Chief at Queenstown decided to use all his decoy ships to try to intercept him on his homeward voyage. Accordingly, we sailed from Lough Swilly on August 5th and made our way into the Atlantic. The *Deutschland* was unarmed, and there was really little likelihood of getting him, unless caught unawares at night or in thick weather, as otherwise we couldn't have sunk him on sight; we should have hoisted the White Ensign and ordered him to stop, but we could have taken offensive action only had he tried to escape.

When we were some days out we heard suspicious wireless signals close to us and kept on till we got to the Rockall Bank. This we reached at dark, and we then heard apparently German wireless quite close to us. But we were not able to locate the track of the *Deutschland*, and there was nothing further to be done.

At 8 P.M. on the 18th—our thirteeth day out—we were steaming south, disguised as a neutral, when a submarine was sighted nearly on the port beam, about five miles distant and steering on an opposite and parallel course at an estimated speed of nine knots. It was just on sunset, and we were showing well up against the setting sun; he, on the other hand, was only indistinctly visible against the land. We continued on our course without seeming to take any notice and put on our steaming lights at the usual time. It soon became obvious that he didn't intend to attack us, as he remained steaming northward on the surface, and we were plainly visible. As no submarine activity had been reported for several months, we concluded that he was a mine layer who, having been



THE MINE LAYER "UC-5"

This submarine is similar to the type that Admiral Campbell pursued for two days. Note the two mines on her deck.

south and laid his mines, was now returning home.

We therefore decided to try to intercept him during the night. At 8:25 we darkened ship and headed north at full speed. The stokers fired up for all they were worth, and we got 8.2 knots out of the old ship—the best she had ever done. During the night we made slight alterations in the appearance of the ship, so that he wouldn't recognize us. German wireless was heard close to us during the night, and we had great hopes of encountering him; but at daybreak he was nowhere in sight.

We had given him an allowance of 9 knots—the maximum we expected a mine layer to go—and had he been going this, he should theoretically have been sighted. Concluding that he had not been going so fast, we laid off a new track for him at 7 knots and put him on a course for St. Kilda, a spot German submarines frequently made. At 5:30 A.M. we altered course to the eastward, on a course that a ship from America to Liverpool would be taking. This was a bold thing to do in daylight, but any other course likely to cross his path would have aroused suspicion. If our new estimate was correct we ought to intercept him at 6:15; and sure enough, at 6:15 we sighted him on the starboard bow, now about five miles distant, still on the surface and steering northward. He remained in sight for some minutes, and careful bearings were taken, which indicated that if we both continued our courses we should meet. He then submerged. The question now arose as to what to do.

Judging from the previous night, he had no intention of attacking, and apparently he had no guns. The only way to get at him was to attempt depth charges. This was rather a forlorn hope, as it was 6:50 before we got to a position where he might reasonably be; but the White Ensign was hoisted and a depth charge dropped, without any visible result.

We had apparently shot our bolt. Our present course was at right angles to his and so would take us away from him for good and all; to alter round toward his course would leave no doubt in his mind as to our identity, even if he didn't connect the depth charge with us, which was highly improbable.

Loath to leave our quarry, we veered northward. Our hope was to catch him on the surface, within gun range, or to ram him. During the day the neutral appearance of our ship had been removed, the funnel had changed its color, and we now sailed as a British collier with no colors flying.

At 5:30 P.M. we estimated that we were ten miles ahead of him and out of sight; we therefore turned round and took an

outward and southerly course, in order to meet him again. At 5:50 P.M. he was sighted on the horizon, heading toward us and apparently charging his batteries. He remained in sight for ten minutes and then submerged. At the moment of sighting him our engines broke down, and we were laid up for ten minutes. Luckily, our enforced halt had no effect beyond the thrill of having the enemy in sight and our engines disabled at the same time.

Forty minutes later, just at the time we knew we should be passing him and our eyes were searching for his periscope, a torpedo was fired at us from the port beam at a range of about 800 yards. It fell ahead of us; a very bad shot on his part, as the conditions were good. There was no sign of his periscope and hence no chance to ram him.

We were now steaming in opposite directions, and the distance between us was increasing rapidly. So at 7:10 P.M., by which time we were presumably out of sight, we turned north once more, hoping to get on top of him as he came to the surface at dusk. But no signs of him were seen. During the night all lights were extinguished, and for the third time in twenty-four hours we altered the appearance of the ship. Our great donkey-boiler funnel, which had been prominent before, disappeared, as did the awning stanchions; and the funnel assumed yet another hue. At daylight we thought we saw him dead ahead against the horizon, but he was hopelessly far away, and we reluctantly turned homeward.

The amount of work put in by our small crew can easily be guessed. The guns were kept ready and manned at the time, the funnel was repainted thrice, whilst structural changes were also made. On the way south, I decided to put into use one of our "big" disguises, as there was no knowing what description might have been taken of us when we dropped the depth charge. We anchored off the coast, out of sight of land, and made the change at night.

On August 22nd, when the Commander-in-Chief was surveying Queenstown Harbor from Admiralty House before breakfast, he wanted to know what ship was that lying out in the roads, stacked with timber, having stump masts and a slight list. None of the staff seemed to know and were busy telephoning to the Examination Steamer, when I turned up and reported S.S. *Farnborough* arrived!

Much to our disgust, we were ordered shortly after to sail as soon as possible for Bermuda. It seemed hard luck—our appetites being whetted, after a dull three months, by our recent chase and still more by the fact that in September the submarine warfare was in full swing once again—to have to go thousands of miles away. Apparently word about our coal having been afire several months previously had trickled through, and the Admiralty decided that we must discharge our coal at Bermuda, loading timber in its place at Quebec. The change of cargo was undoubtedly advantageous, and as far as possible decoy ships thereafter were filled with wood or with some similar substance.

As soon as we got the orders we buzzed round, anxious to have the job over and to return to the danger zone. I hoped to get through with it in a month or six weeks, but events arose that prevented our return to our old haunts for several months.

It was Christmas Eve when we arrived back at Queenstown, and we spent a busy but pleasant Christmas Day in harbor. The submarines had been active during our absence, and there were rumors of further intensified submarine warfare. There was no time to be wasted, and as we were badly in need of a refit I asked permission to go to Plymouth for this purpose. Approval having been readily given, we sailed at once—but not before Admiral Bayly had been on board and presented Distinguished Service Medals to the men who had won them in our previous actions.

January, 1917, was spent at Plymouth in refitting, giving leave, and studying all that had happened in submarine warfare during our absence. I came to the conclusion that the only way for us to insure decoying the enemy to the surface was deliberately to get torpedoed, trusting to be able afterward to fight with our guns.

I explained my intentions to my crew and called for volunteers to remain, giving any man who wished to leave the ship an opportunity to do so. Every man remained.

During our refit it became known that the German intensified submarine warfare, which meant that all ships were liable to be sunk without warning if found approaching the British Isles, was due to start on February 1st. So we cut down our refit and returned to Queenstown before the end of the month. We sailed again on the last day of January, with instructions to return after ten days.

We proceeded at once to our old hunting ground southwest of Ireland. This was where most of the traffic between America and England passed; where, too, the water being deep and the weather atrocious at times, submarines were fairly free from the menace of mines or the molestation of auxiliary patrol craft. We intended working continually in this area, and some new disguise had to be effected daily. Every night we steamed westward, the dark hours being the time when the submarine would probably be busy recharging batteries or getting fresh air. During the day we steamed east, as if homeward bound from America or Canada with a good fat cargo.

Daily we had reports of some ship being attacked or sunk—sometimes ten or fifteen miles away from us, sometimes one hundred. It seemed to be only a question of odds as to when our turn to be torpedoed would come. There is a deal of difference between being in a ship that will take every precaution against destruction and in being in one that, if a torpedo is seen approaching, will try to make it hit; yet I never saw a crew more anxious for a fray.

They realized that if the German intensified submarine warfare was a success England would be beaten. We were losing some 600,000 tons of shipping of all nationalities a month, and this could not go on forever. And as there was nothing to stop the submarines from coming out, it was up to the auxiliary patrols and to us to grapple with the one weapon that could, and nearly did, bring England to her knees. So it was that, when our ten days were up and we were due to return, I decided to remain out. Three times we were ordered to return, but three times I evaded. I felt we were in touch with the enemy, and there are few orders that justify one in losing touch.

Our chance came on our seventeenth day out. At 9:45 A.M. we were on our "homeward bound" easterly course. The sea was calm, and everything looked peaceful. Suddenly a torpedo was seen approaching from our starboard side; it was fired at a great range, and we should have had time to avoid it, but we wanted to make sure it hit. It drew close to the ship, heading straight for the engine room. At the last moment, when it would be too late for the enemy to see our movement, I put the helm over and brought the torpedo just abaft the engine room. This undoubtedly saved the lives of those below, but the missile caught us on the bulkhead and flooded two thirds of the ship.

Whilst the torpedo was approaching I sang out to the Navigator, who was in the chart house working out his morning observations, "Look out, we are going to get it, all right." He bobbed his head outside and said, "Aye, aye, sir; just time to finish this sight," and back he went to his job, which was to have our position always accurate in case we wanted it.

The torpedo exploded with a great crash and knocked several of us down, including myself. When I got up I couldn't help laughing. It will be remembered that in our drills I would say "Torpedo coming," and then "Torpedo hit" or "Torpedo missed." Now the torpedo had hit and I saw the men rushing for the boats, but on looking over the front of the bridge I saw a group of men still smoking and lolling over the ship's side. I shouted out to know why they weren't making for the boats. The reply was, "Waiting for the order, sir, 'Torpedo hit!'" They then joined the panic party.

Whilst they were getting away in the boats the submarine, not two hundred yards from the ship, watched us through

his periscope—proof of the necessity of having even the "panic" correct in every detail. And sure enough it was. The boats were lowered in a fashion enough to give any commander seven fits, and the crew got in anyhow; one boat was only partly lowered and then allowed to jam, so that a rush was made for the next one, but two lifeboats and a dinghy eventually shoved off with "all" the crew.

Meantime, things were happening on board. The torpedo had burst the after bulkhead, and the ship began to settle by the stern so rapidly that our black cat, which had either been blown off the forecastle by the explosion or had jumped over in fright, swam down the ship's side and in board over the stern.

The chief engineer reported that the engine room was flooded, and I ordered him and his men to hide. This they did by crawling on the top gratings—the ship being abandoned, they couldn't come out on deck.

The submarine now came and inspected the ship at very close range—some ten or fifteen yards. From my lookout at the starboard end of the bridge I could see the whole of his hull under water, and the temptation to open fire on the periscope was great. It would have been a stupid thing to do, however, as it would have inflicted no harm. But it looked at the time as if we had gone to the trouble of getting torpedoed for nothing, since he appeared to be moving off. There was nothing for it but to wait and watch the submarine move slowly past the ship and away ahead. All this time the men in hiding never moved a muscle. Had one man become panicky and showed himself, the game would have been up; the scrutiny of the submarine was indeed severe.

At 10:05 A.M. the enemy broke surface about three hundred yards on our port bow, but not in the bearing of any of the guns. The boats had by this time got to our port quarter, and toward them the submarine proceeded. It was only a matter of waiting now, as the conning tower was open at last. It was obvious that the submarine would pass very close to the ship, and we might just as well have all guns bearing, to make sure of our job.

As the submersible came abreast of the ship the captain was seen coming out of the conning tower; and at this moment I gave the order to open fire. The White Ensign fluttered at the masthead, and three 12-pounders, a 6-pounder, the Maxim guns, and the rifles all belched together. What a shock it must have been for the captain suddenly to see our wheel house collapse, the sides fall down, and the hen coop splutter forth Maxim shots! But he had not long to think, as the first shot hit him. I believe the first intimation the submarine crew had that anything was wrong was seeing their captain drop through the conning tower. It seemed almost brutal to fire at such close range—about one hundred yards—but we had taken a sporting chance ourselves in decoying him to such an ideal position that one really had no thought other than destruction.

HIGHEST OF AWARDS

The Victoria Cross was awarded to Admiral Campbell after the sinking of the *U-83*. It was also given to several members of the crew of the *Dunraven*.

Forty-five shells were fired in all, practically every one being a hit. The enemy finally sank with his conning tower shattered and open, the crew pouring out as hard as they could. About eight men were seen in the water, which was bitterly cold and thick with oil. I ordered the boats to their assistance, and they were just in time to rescue one officer and one man—as the panic party called them, a "sample of each." Thus ended *U-83*.

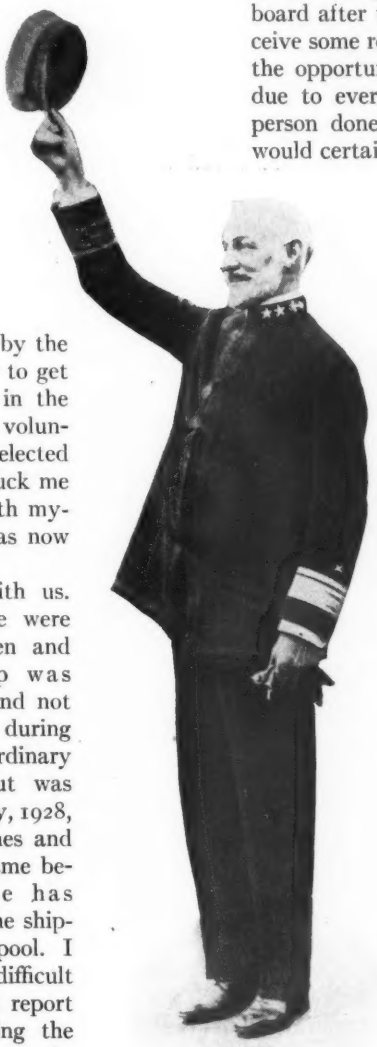
Our main object achieved, the next important consideration was the ship it-

self. As soon as the submarine had come to the surface, I had wirelessed that we had been torpedoed, and now further signals were sent for assistance.

The "panic party" came back to the ship, and a rapid survey was made. The engine room and boiler rooms were full of water, and the two after holds were rapidly filling. I didn't appreciate at that time what stability the cargo of wood would give us, and it appeared that in a very short time she would sink by the stern, as she was surely and slowly settling down. I therefore mustered my crew and called for twelve volunteers to stand by the ship, the remainder to get out of harm's way in the boats. Every one volunteered to stay, so I selected twelve; it never struck me at the time that with myself the number was now thirteen.

But luck was with us. When aid came we were towed to Berehaven and blocked. The ship was eventually salved and not only sailed again during the war, as an ordinary tramp steamer, but was still running till May, 1928, under various names and owners—her last name being *Hollypark*. She has now been sold to the ship-breakers at Liverpool. I found it extremely difficult to word my official report without overstating the case, but having seen the whole action I was filled with the greatest pride in the conduct of all my crew, who might almost be said to have passed through the supreme test of discipline.

I had the honor of being received by H. M. the King a few days later. He informed me that he had awarded the Victoria Cross to me, the Distinguished Service Order to my first lieutenant and chief, and other decorations to several officers and men. In fact, His Majesty wished every man who had remained on board after the ship was torpedoed to receive some recognition. I was glad to have the opportunity to say that success was due to every officer and man; had one person done the wrong thing the action would certainly have been a failure.



SALUTE!
Admiral Sims arrives in England. He had a great interest in the "Q" boats.

My next ship was much the same as our last one—an ordinary tramp steamer of about 3,000 tons and a speed of 8 knots. She wasn't so old as the *Loderer* and, although not quite so long, had a more solid appearance in every way. A mounting of a 12-pounder had just been devised that enabled the gun to fall on its side, so there was less vertical height to be concealed. One push of the gun, and it was up and in position ready for firing. This innovation enabled us to arrange the armament so as to have a very fine broadside of one 4-inch gun and three 12-pounders.

The 4-inch gun was mounted aft on the poop. It was fitted in an ordinary cargo hatch, the sides of which fell down. As this hatch did not wholly conceal the gun we kept the top part covered—sometimes with a dummy boat, upside down, such as may be seen on a ship at sea, sometimes with a crate intended to represent part of our upper deck cargo, or sometimes, as an alter-

NOT ALL SHELLS AND TORPEDOES
The crews of the Mystery Ships found time for things other than warlike.

native, a spar was draped with the ship's wash.

Two 12-pounders were placed, one each side, in "cabins" so realistic that it was literally impossible to tell they were faked. A simple but very effective arrangement allowed the upper part of the cabin to drop when bringing the gun into action. The cabins were fitted with portholes, a dummy door, and a handrail—this last at the place where the crack between the upper and lower parts would otherwise have shown. Two other 12-pounders, tilting ones, were placed amidships and could fire to either side, as desired. One we mounted on the forecastle; then came the problem of concealment. There was already a windlass on the forecastle, and a second would have looked suspicious. Eventually we put over it a canvas cover that had grass line or rope attached to it, so that it passed for a big hawser.

The other 12-pounder was stationed on the boat deck, with the ordinary canvas on the rails hiding it from one view and lumber on the other. At this time every merchant ship was being fitted with a defensive gun as fast as guns became available, and I felt convinced such a visible gun was necessary. Having asked for one in vain, I got the dockyard to make me a 12-pounder of wood, with a brass handle to turn it round by. It was mounted aft and could do everything except fire.

In addition to our guns, we had two 14-inch torpedoes. Tubes for them were fitted on the mess deck, the doors cut in the ship's side being hinged from inside. I had to train some of the crew specially for torpedo work, as I didn't want to take on any more men unnecessarily. This ship had a poop, so we were able to fit our depth charges in the stern, two on each quarter, with ports that could be dropped at will. Our armament was now complete.

The fitting of the ship took nearly two months. We got away toward the end of May and, after a few days of drill, sailed for Queenstown, under the name of *Pargust.*

The United States was now in the war, and Admiral Sims was a frequent visitor at Queenstown; in fact, for some days on one occasion he flew his flag there as Commander-in-Chief while Admiral Bayly was away. We anchored in the roads with a lot of other merchant ships. Much to our amusement and joy, Admiral Sims and Admiral Bayly, who had had no description of us, steamed round our ship, examined us with glasses, and decided we were not the Mystery Ship they were looking for. They then went to nearly every other ship in the anchorage before coming back to us.

When on board, they had not much difficulty in finding the 4-inch gun and the tilting ones, as they were fairly visible to any one on deck, but the two "cabins" quite defeated them. In fact, I stood with Admiral Sims within a foot of the bulkhead of the "cabin" and told him there was a gun a few feet off; he thought I was "pulling his leg" till, by a prearranged wink of my eye, down came the cabin—and the Admiral found the muzzle of a 12-pounder at his chest.

With a loud shout of "Gee whiz!" he took a smart step to the rear.

Admiral Sims from this time onward took a great interest in Mystery Ships. Later in the year the Americans fitted out a ship of their own, the *Santee*, at Devonport. I had the honor of being invited to go over her and to make suggestions, but it was impossible to improve on the job. As bad luck would have it, this very fine ship was torpedoed on her first trip out of Queenstown, and the submarine never came to the surface.

I happened to read Admiral Sims's book about these things when I was at Greenwich War College and found he had described me as being phlegmatic. Not knowing what the word meant, I asked the two captains who sat on either side of me at lunch that day, without disclosing why I wanted to know. The first one replied, "A silly ass," and the second one, "A dull sort of blighter."

Twenty-four hours sufficed for all that had to be done at Queenstown, and by the last day of May we were back to our old hunting ground. We soon had visible evidence that the submarine menace was at its height. Steaming past the southwest corner of Ireland at daybreak, we sighted what we at first thought was a periscope and at once we got ready for action. On seeing several more we began to rub our eyes. When conning towers also appeared, we knew something was amiss, but it wasn't till we got close up that we found a ship had been torpedoed and sunk, and some thirty men were struggling in the water amongst pieces of wreckage. We were able to rescue about twenty—two Scotch engineers and the remainder lascars. Four of the lascars died soon after we got them on board, and I buried them at sea.

I now had sixteen additional men on board, fourteen of whom spoke no English, and they created something of a problem. American destroyers closed us during the forenoon, however, and relieved us of our guests. We were never keen to take on survivors of sunken ships, but it had to be done in the interests of humanity. In addition to the fact that they were a nuisance aboard, there was always a certain amount of risk in stopping to transfer them.

We had no orders about returning to harbor this time, and we felt confident we should have another engagement before we returned. And so it proved. June 7th was a nasty day; in addition to a choppy sea, we encountered heavy rain and thick weather. We were steering east at 8 A.M. when a torpedo was fired at us from the starboard side at close range. We couldn't have avoided it had we wanted to—it jumped out of the water and hit the ship bang in the engine room, making a 40-foot hole and bursting the after bulkhead. The engine room and boiler room were at once filled with water, as was No. 5 hold. There was no need to say "Torpedo hit" on this occasion!

The helm was put to starboard in order to form a lee for the boats, and the panic party rushed to the boats. One had been smashed; the remaining lifeboat and two dinghies were lowered and filled with the crew. Our dummy defensive gun was abandoned without firing a shot, incidentally, though the crew went through pantomime performances of trying to load it. Our only casualty was the man in the stokehold, who was blown to pieces. The second stoker was more fortunate—he had just been sent on deck with a message.

At first we could see no signs of the submarine, but as the last boat was shoving off we saw his periscope about 400 yards away; he was coming straight toward the ship for his inspection. I glanced through my slit and saw the crew on the forecastle lying still as the deck itself—not a speck of a face to be seen. They knew nothing except that the ship had been torpedoed, and their duty for the time being was to pretend to be part of the deck. My admiration for them was intense, as although every one else on board was concealed, the others could at least breathe in comfort and move their muscles.

The submarine, with only periscope showing, came to within about 50 feet of the ship, passed close to the boats, and submerged. A little later the submarine broke surface 50 yards off the ship, but he didn't open his conning tower, and although one lucky shot might have disabled him I

LAST OF THE GALLANT "DUNRAVEN"

The conduct of the crew in this engagement with the *U.C.-71* drew from Admiral Campbell his unqualified praise. The ship had already been torpedoed and the magazine exploded when this picture was taken from the boat deck.

preferred to wait for the lid to open. He was parallel to the ship and pointing toward our stern, where Hereford and his lifeboat were. Hereford knew I didn't want to open fire on a bearing on the quarter, as my 4-inch gun would not depress far enough; therefore, with great cunning and coolness, he proceeded to pull toward my starboard side. The submarine followed him round—taking, of course, a bigger circle.

By the time Hereford was on our starboard beam I could see the submarine coming close up under our starboard quarter. His lid was now open, with an officer with a megaphone on top. I never took my eyes off this officer; as long as he was up I knew I could withhold my fire. Hereford started to pull toward the ship; his job was done. The boat crew all but laughed to see the submarine slowly decoyed to destruction, and they had to be reminded that they were woe-begone shipwrecked mariners—it would never have done for them to have burst out laughing.

There was nothing more to wait for—the submarine was abeam of us and about 50 yards away—so at 8:36, thirty-six minutes after being torpedoed, I gave the order to open fire. The first shot hit the conning tower, and shot after shot followed suit; it was practically point-blank range.

The submarine heeled over to port after the first two or three shots. He stopped when on my bow, with a heavy list to port, and oil poured out from him. A large number of the crew came out of the after hatch and the conning tower and held up their hands; I took this to be a signal of surrender and ceased fire. But the submarine at once forged ahead again. Although she was apparently done, I was obliged to reopen fire. After a few more shots an explosion took place in the submarine, which fell over and sank about

300 yards from the ship—four minutes after we first began to fire.

Several men were floundering in the water, and the boats went to their assistance in time to save two. As in our previous action, wireless signals were now sent out for help. Although the *Pargust* was in far more stable condition than was *Q-5*, we had no engines and so were helpless. The submarine turned out to be a mine layer, the *U. C.-29*. It was a long way out for a submarine of this class to be, as the water was far too deep for laying mines.

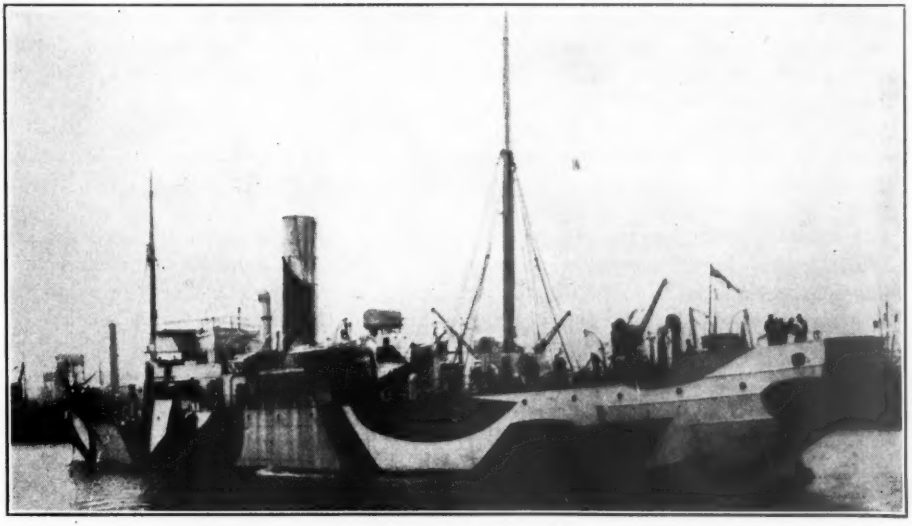
We lay inert till 12:20, when the *Crocus*, a Queenstown sloop, arrived and in a very seamanlike manner took us in tow. H.M.S. *Zinnia* and U.S.S. *Cushing* also came up, and the prisoners were transferred to the *Zinnia*, which took them direct to harbor. The tow was uneventful. After the ship was in drydock we found that repairs would take so long that we got permission to pay her off and start again.

I was ordered to convey to the officers and men under my orders the Admiralty's high commendation of the discipline and courage shown by them in this encounter, but the greatest honor of all came to us when H. M. the King approved of awarding one Victoria Cross to an officer and one to a man of H.M.S. *Pargust*—the recipient in each case being selected by the officers and men respectively. This was the first time in the history of the Navy that a whole ship had been so honored.

My officers wanted me to be the officer recipient, but I could not agree to this, as I felt that the Victoria Cross I already wore was really on behalf of my crew. So the crosses went to Lieutenant Ronald Neil Stuart and Seaman William Williams.

I have said that any one man could spoil the show; I might have added that one man could likewise save it. When the explosion of the torpedo took place the releasing weight of the starboard gun ports was dislodged by the force of the explosion, and but for Williams's great presence of mind in taking the whole weight of the port on himself and so preventing premature exposure of the gun the outcome might have been disastrous.

No time was lost in finding another ship to fit out—this time the *Dunraven*, a ship of about 3,000 tons but slightly larger than either *Farnborough* or *Pargust*. I decided on this occasion not to change the name at all. She had a much larger poop than her predecessors, and a length of 331 feet. Her one fault was that the donkey boiler, which was down below, would be put out of commission if the engine room were



H. M. S. "SAXEFAGE"
This British Mystery Ship is shown with typical wartime camouflage.

torpedoed; but she was so suitable otherwise that this had to be accepted.

In fitting out the *Dunraven*, improvements were made in many details. We placed tilting 12-pounders on the forecastle—one to a side—a tilting 12-pounder on the after end of the boat deck, and a 4-inch gun on the poop. We also got a real defensive gun, a 2½-pounder; the dummy 12-pounder salved from *Pargust* we carried on the mess deck as a curio.

The fitting of the poop played a large part in the subsequent action and is worth following with some care. Right aft, on the raised platform that was then usually seen in other tramp steamers, was the 2½-pounder, visible to all. In a hatch on the poop deck was the 4-inch gun. That the gun might have a practically all-round fire, the rail round the poop and the shrouds of the mainmast were easily removable. The sides of the hatch were hinged to fall outward by their own weight; the rails round the poop, hinged to fall inward, were connected by wires to the sides of the hatch. The rigging of the mainmast was also fitted with slips, which in their turn were connected to the sides of the hatch.

Now the hatch itself was kept up by a tumbler and pin. The net result was that when the pin was removed the sides of the hatch fell flat on the deck; in doing this they pulled down the rails, the slips of the rigging were released, and the shrouds fell toward the mast. In order to avoid any risk of premature exposure the pin on which the collapse of the whole contraption depended was securely kept in place, and it took a good blow to dislodge it; but once removed it was essential that no speck of grit should impede complete collapse, and all the leads and blocks of this arrangement had to be kept in perfect order.

On the front end of the poop were three samson-posts, which could be removed at will. On the center one was a derrick that lay directly over the top of the gun; the topping line of it led to the top of the center samson-post and had a weight attached to it inside. The end of the derrick was attached to the after side of the hatch. Lying on the derrick and concealing the part of the gun above the hatch were odd bits of clothes or dirty canvas hanging up to dry. When the sides of the hatch collapsed the derrick was also released, and the weight inside the samson-post pulled the derrick, together with what was on it, up in the air and clear of the gun.

Just beside the hatch was what appeared to be an ordinary hawser reel—a round steel drum on which ropes are wound. In reality, it was a dummy provided with slits and a small periscope; this was the post of the officer of the gun, who reached it through a trapdoor from below.

The inside of the poop was quite large. In it were two depth charges, ready to be released through the stern posts; the 4-inch magazine and shell room; and the 2½-pounder magazine, ready to feed the guns if the supply kept at the guns themselves became exhausted.

By this time nearly all merchant ships were fitted with wireless, so we no longer needed to conceal our aërial.

It happened that about this time a large quantity of railway trucks were being sent to the Mediterranean—I think for Salonika. We hit upon the idea of taking along four full-sized trucks, made of canvas and wood and easily collapsible, so that we could display them or stow them away. I also had the ends of the bridge armored with one-inch plating—which, of course, had the wood planking outside it; and but for this precaution I should not be writing now.

We introduced a further innovation in the form of a perforated steam pipe, which was led round the upperworks. Steam admitted from a valve on the bridge escaped from hundreds of tiny holes and enveloped the center of the ship in a cloud of vapor. The idea behind it was that, in the event of being shelled, we could make it look as though we had been hit in the engine room.

These three innovations—the railway trucks, the armored bridge, and the steam pipe—all played an important part in the next action, though we had never before required them.

Thanks to the coöperation of the dockyard, we fitted this ship out in record

time. Although my crew had been kept together and were working on the fitting out, we didn't actually commission till they were able to live on board, which was July 28th—seven weeks after our previous action and eleven days before our final one.

On leaving Plymouth we set course for Gibraltar, sailing as a Blue Funnel steamer and with an upper deck cargo of four railway trucks—obviously bound for Army service in the East and therefore an attractive bait. During the first three days out we received wireless reports that indicated that an enemy submarine was busy in the Bay of Biscay, and furthermore that her commander appeared to favor his gun in preference to torpedoes, as ships were being attacked by gunfire.

This method of attack was not what we wanted. In the case of being torpedoed, there was a reasonable chance of decoying him to come close to the ship; but he could shell a ship with gunfire at long range, and there would be no particular reason why he should close until the ship at which he was firing was put out of action.

How was this sort of attack to be dealt with? The ship was a big target to the submarine, and the submarine was a small target to the ship. We had thought out a long-range gunfire attack in harbor and arranged every conceivable detail for attempting to decoy a submarine close to us. On no account did I intend to open fire at a greater range than 1,000 yards, unless a premature explosion or other accident disclosed our identity. Judging from our wireless reports, we appeared to be closing toward this gunfiring submarine, and on the night of August 7th I altered course to the northward on a homeward track to meet him. This necessitated collapsing the railway trucks and laying them on the deck, as no ships carried railway trucks to England.

The next day we sighted our submarine. It was at 10:58 A.M., and we were following a zigzag course, as all merchant ships did in those days. The submarine was sighted on the horizon just before our starboard beam and steering toward the ship. We assumed our usual rôle of pretending we had a bad lookout and did nothing. He remained in sight till 11:17, when he submerged. We still hoped he was going to torpedo us, but forty-five minutes after we had sighted him he came up nearly dead astern, at a distance of about 5,000 yards, and opened fire.

Our Red Ensign was promptly hoisted at the ensign staff, and the 2½-pounder gun at once returned the fire. All the shots fell short, in order to encourage him closer. The crew also had frequent missfires and delays; in fact, their firing was disgraceful —as it was meant to be.

The ship herself seemed to be trying to escape; in reality, we reduced speed by one knot—which also reduced the range—and in order to avoid detection of our stratagem we made as much smoke as we could. In addition, we attempted to assure the enemy of our bona fides by making fake wireless signals *en clair*. There was a chance he had his aërial rigged and would take them in; we therefore sent out such signals as "S. O. S.," "Submarine chasing and shelling me," "Submarine overtaking me," and "Help, come quickly." None of these signals mentioned our position, however, so that no one could interfere with us.

The shelling was very persistent, but nearly all the shots fell just over our bow—in fact, we were steaming into them all the time. Of course, the submarine could not see the splashes and was probably under the impression he was hitting us. At 12:10, after having shelled us for half an hour and satisfying himself that our after gun wasn't much good, he ceased firing and steamed toward us. Fifteen minutes later he turned broadside and reopened fire. He was now about 1,000 yards off, and I passed the word along to stand by to abandon ship.

The psychological moment to do so came at 12:40, when a shot fell a foot or so off the ship's side, abreast the engine room. I instantly turned steam on from the bridge and let loose the clouds of vapor that were meant to convey the impression that we had been hit in the engine and boiler rooms. At the same moment the ship was stopped the "panic party" got busy, and the usual pandemonium reigned.

The submarine now closed rapidly, but

fired three more shells for good measure. Unluckily for us, the first of these hit the poop, and a big explosion followed. I thought at first that the magazine had blown up, but a few minutes later, when the steam cleared, I saw that the poop was still intact and our secret not disclosed. I later concluded that only a depth charge had exploded; in any case, two of my men were severely wounded, and Bonner, the officer of the gun, was blown out of his hawser reel. But with great presence of mind he crawled into the hatch with the 4-inch gun's crew. The last two shells also landed in the poop and set it on fire, so all in all the prospects were not exactly hopeful.

Meantime, the panic party had been busy, and the boats were just leaving the ship. The submarine would soon pass under our stern, but black smoke was pouring out of the poop and blowing straight over him. I was now in a terrible quandary. I knew that the poop would blow up—and with it the gun's crew. Yet I couldn't order the crew to leave the gun, as the ship was ostensibly abandoned, and the boats were away. If I opened fire I might save the men on the poop, but should we get the submarine? I doubted it; the target was too hazy.

If I waited a bit, however, he would soon be through the smoke and on our weather side, when we'd have a better chance to get him. Cold-bloodedly to leave the gun's crew to their fate seemed awful, but our duty was to sink the submarine. By losing a few men we might save thousands not only of lives but of ships and tons of the nation's requirements.

At 12:58 the submarine was passing our stern; it was only a matter of seconds before he would be within 400 yards of my three 12-pounder guns. At this instant a terrific explosion took place, and the whole ship shivered. The stern of the ship was blown out, and the 4-inch gun and crew were hurtled into the air. The dummy railway trucks now came into play in a way I had not foreseen. All the gun's crew except one landed on the trucks, and the canvas and wood they were built of broke their fall before they reached the iron deck, with the result that no one was killed. The odd man landed in the water and was eventually picked up, none the worse, by the panic party. The gun itself landed on the well deck, and shells landed all over the ship, but luckily not a one went off.

Had this disastrous explosion delayed a few seconds I might have had a different tale to write; but there it was, and we had to make the best of it. As soon as the detonation took place the submarine did a crash dive, but not before a couple of shots had been fired at him, one of which may possibly have been a hit. The White Ensign was now flying at the masthead, and the gun ports were down; in short, we were a man-of-war in all respects, and we fully expected to be torpedoed. In the meantime, I had the wounded removed to the saloon and cabins, and hoses were rigged and turned on the poop. We could not get very near, as the whole place was in flames and the deck red-hot.

What more could be done? Nothing—except to await the inevitable torpedo and have another attempt to decoy the submarine to the surface once more. It was a sporting chance, with the odds heavily against us. To wait on board a ship, with engines stopped and a fire raging round the big magazine, for a torpedo to be fired at you was certainly asking for trouble; but there was a certain amount of humor about it all, and several of us had small bets as to where it would hit.

We didn't have long to wait. At 1:20 a torpedo was seen approaching from our starboard side, fired at a range of about 1,000 yards. As this was the fifth time we had watched a similar approach it left us rather cold. It hit just abaft the engine room, and hatches and railway trucks were blown about the place.

I now ordered abandon ship, and a second group of men started a new panic party. The boat that had been left end up was lowered and filled, the original panic party returned to pick up a few more men, and a raft consisting of barrels and spars was launched. This, we thought, would convince the enemy that a final abandon-ship was in progress. Remaining on board

were two gun crews, two men at the torpedo tubes, four of us on the bridge, the chief and one stoker, the doctor and the nine wounded men—thirty-four all told, of which only twenty-three were fit for fighting. The gun crews that I kept back were the one on the forecastle, which had a good arc of fire, and the "cabin" gun's crew, which could man, unseen, either the port or starboard gun.

At 1:40 P.M. the periscope of the submarine was sighted on our starboard bow, and for nearly an hour he steamed round and round the ship, with an occasional turn toward the boats. I debated the wisdom of trying to torpedo him. He frequently offered a good target, but I had no great faith in my torpedoes, and I finally decided to wait a chance of gunfire. I thought that sooner or later he would be sure to come up.

While this trying inspection was going on, the fire on the poop was still raging, the magazine and shells were exploding in penny numbers, and the resultant din was incessant. Then, too, water slowly but surely was flooding the ship. Steam in the boilers was dying out, and as the ship had been "abandoned" it would never have done to stoke up; smoke from the funnel would have betrayed us. We thus reduced any chance of escape still more.

At 2:30 the submarine came to the surface, dead astern of us and a few hundred yards distant. Our 4-inch gun had gone, the 12-pounder on the boat deck was masked by the mainmast, and no other gun would bear. I thought of shooting away the mainmast but realized that before this could be done the submarine would dive. As it was, he opened fire with his big gun as soon as he broke surface and shelled us for twenty most unpleasant minutes.

A Maxim was also firing at the boats, and several of the shots fell very close to them. They pulled away, but Truscott, in the dinghy, kept as close as he could to our ship. He told me afterward that things looked ugly, and he was going to save us if he could.

The first shell of all burst on the bridge, and it was now that our armored ends were of service. But for them both Hereford and I would have been killed, for the plates were covered with splinters. Hereford got one in his head—but happily only a small one.

It was surprising what comparatively little material damage was done by this heavy close-range bombardment. Our men stood the strain marvelously, and not one moved. I reminded them through the voice pipe that the ship had the honor of the Victoria Cross to maintain; but I don't think we could have stuck it much longer, as it appeared that the submarine would shell us till we were reduced to a floating furnace or until we surrendered —which was not to be thought of.

At 2:50 he ceased fire and submerged. Apparently he had no intention of running the slightest risk, so when he passed the ship again at a distance of about 150 yards, with only periscope showing, I personally fired the port torpedo at him; but it must have passed over him. Anyhow, he couldn't have seen it, for he circled round our bow. I now ordered Hereford to fire the starboard torpedo, but it either failed to explode or grazed over the top, as we could distinctly hear it make contact. The submarine heard it, too, and promptly submerged.

The game was now nearly up, and I signaled for assistance. I thought the enemy would now torpedo us till we sank, and I hurriedly arranged, pending the arrival of assistance, that when torpedoed all the men remaining were to abandon ship except one gun's crew. But the next torpedo never came. I have since learned that the submarine had none left; nor could he attack us again with gunfire, for very unexpectedly an American yacht, the *Norma*, came up. She sighted and fired at the periscope—without success, however—and at 4 P.M. was close alongside. H. M. destroyers *Attack* and *Christopher* arrived soon after.

The action, which had lasted for nearly five hours, was now at an end. Having lost our quarry, we now made every effort to save the ship. The poop had been completely gutted; the last thing to explode was a small box of tubes. I couldn't help

laughing—it seemed so stupid and futile, after all the explosions we had had, to see a box of tubes explode like a squib.

After giving the necessary orders to get ready for towing, I went to the saloon to see the wounded. It is hard to put anything into words—one man was sipping blood to quench his thirst, but all were cheerful, and their only question was, "Have we got him, sir?" When to my everlasting regret I had to tell them we hadn't, they said: "We've done our bit." And, if ever men had, they had.

By 6:45 the *Christopher* had us in tow, and course was shaped for Plymouth. The Chief had reported that he was unable to raise steam; the engine and boiler rooms already had several feet of water in them, and the water was gaining faster than we could pump it out. At about 1:30 A.M. I felt the ship was going and ordered all the crew to fall in on the well deck forward. They did so in silence; it was pitch dark and blowing very fresh.

The *Christopher* now sent her whaler, an open boat with four or five oars. I realized that with the heavy sea running it would make only one trip—and also that it would be unwise to put more than four men into her. So I gave the order, "Four men to get into the boat." Not a man moved; they all knew there would be but one trip, no one wanted to go before the others, and I had to name the four to go. The water was now rising round us, and I ordered the remainder to fall in on the forecastle head. Still there was absolute silence, except for the wind and sea.

The *Christopher*, taking in the situation, bumped her bow against ours, which was gradually getting higher out of the water as the ship went end up. This was a most delicate operation, as a destroyer's bows are very thin. She would bump alongside and then fall off with the sea; each time she bumped one man would jump, in the darkness, from our deck to hers, but no man jumped till he had received my personal order. Discipline held to the end. By the time I got to the bridge of the destroyer the *Dunraven* had gone, and only a bit of her stem was visible. The *Christopher* fired a few rounds, then dropped a depth charge; and at 3:17 A.M. the *Dunraven* disappeared beneath the waves.

As I said in my report, "I—we—deeply regret the lose of one of H. M. ships and still more the escape of the enemy."

There was not a ghost of a chance of salvage, the ship having sunk in some sixty fathoms. The only optimist was some one in the Postal Department; when I wrote asking for the replacement of my lost war-savings certificates and stating how they had been lost, I received a reply that I must wait six months, in case they were recovered! We had, of course, lost everything, and I was dumped ashore in all I possessed—a jersey and trousers, with a whistle and binoculars round my neck.

When I reported to Admiral Bayly at Queenstown he told me that I was not to go on in this sort of work any more. You can imagine how I felt. Not only was I keen on the job myself, but I felt I should be letting my crew down if I didn't keep on. As I was pleading my case, a telegram was brought in for me that read: "Crew of *Dunraven* all volunteer for further service under your command." But it was of no avail; my service in Mystery Ships had come to a close. But I had the privilege of going on with Admiral Bayly as his flag captain.

The official report had to be seen to. What was I to say about my crew this time? And what of the after gun's crew? They had given every ounce in them—as witness Bonner, who had landed on the railway trucks after the big explosion. He crawled to the bridge, in spite of being badly burnt and wounded, and said to me, "I am sorry, sir, for leaving my gun without orders. I think I must have been blown up." He then asked with whom we were in action; when I enlightened him he said, "Is that all? I thought it was at least a battle cruiser."

I discovered on investigation that, unknown to me, at the time of the first big explosion the communication between the bridge and 4-inch gun's crew had been broken. After having tried in vain to get through to report the situation, Bonner and his gallant crew concluded, as I had, that they must wait where they were. Had

they moved they would have spoilt the show, since the ship had already been abandoned and no one was supposed to be on board.

Their deck got red-hot, and knowing the magazines were underneath, one young fellow tore up his shirt and stuffed it in their mouths, to keep the fumes out; others lifted boxes of cordite off the deck and onto their knees, to delay the inevitable explosion. Surely such bravery is hard to equal. They went through the greatest ordeal, but the others on board had also a most trying time. Here was a ship on fire; alone in the Bay of Biscay, with torpedoes, depth charges, and magazines going off at odd intervals, and still the men remained concealed at their posts. In my report I summed up the feelings of us all when I said, "We did our best not only to destroy the enemy and then save the ship, but also to show ourselves worthy of the Victoria Cross the King recently bestowed on the ship."

The German account of this action does not differ materially from my own. Apparently the submarine did not suspect us in any way until the big explosion took place; up till then he was completely taken in by the steam and thought he had really hit us in the engine room. He claimed to have scored ten hits in his close-range bombardment, and when circling the ship afterward saw no signs of life aboard. Apparently he heard the second torpedo pass close to his periscope, but had none left himself for a further attack. I am sorry that Salzwedel, the Commander of the submarine—the *U.C.-71*—was killed later in another submersible; the *U.C.-71* also came to grief.

Admiral Sims wrote me as follows:

I have had the benefit of reading some of the reports of your previous exploits, but in my opinion this fight of the *Dunraven's* is the finest of them all as a military action and the most deserving of complete success. It is purely incidental that the submarine escaped; that was simply due to an unfortunate piece of bad luck. The engagement, judged as a skillful fight and not measured solely by its material results, seems to me to have been perfectly successful.

According to my idea of such matters, the standard of conduct set by you and your crew is worth infinitely more than the destruction of a submarine. Long after we are dust and ashes, the story of this fight will be an invaluable inspiration to British and American naval officers and men—a demonstration of the extraordinary degree to which the patriotism, loyalty, personal devotion, and bravery of a crew may be inspired.

The First Lord of the Admiralty, Sir Eric Geddes, handed me a hand-signed letter, which he very kindly had had photographed to enable a copy to be given each member of the crew. It read:

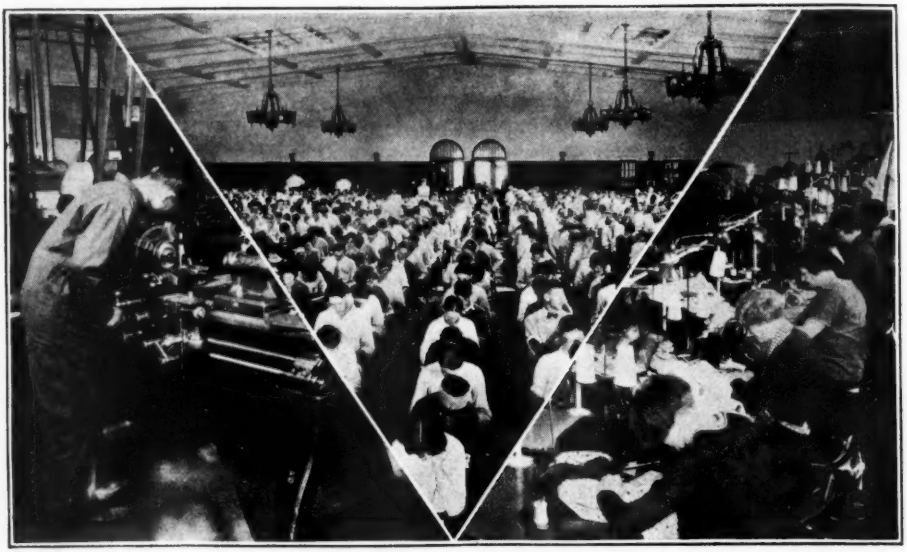
It is with very great pleasure that I convey to you, by the direction of the War Cabinet, an expression of their high appreciation of the gallantry, skill, and devotion to duty which have been displayed through many months of arduous service by yourself and the officers and men of His Majesty's ships under your command.

In conveying to you this message of the War Cabinet, which expresses the high esteem with which the conduct of your officers and men is regarded by His Majesty's Government, I wish to add on behalf of the Board of Admiralty that they warmly endorse this commendation.

Will you please convey this message to all ranks and ratings under your command?

The greatest honor came, as usual, at the hands of H. M. the King. Lieutenant C. G. Bonner was awarded the Victoria Cross, as were the after gun's crew. Petty Officer Ernest Pitcher, the captain of the gun, was selected to receive the Cross itself; the remainder of the crew were awarded the Conspicuous Gallantry Medal. A posthumous Conspicuous Gallantry Medal was conferred on Seaman S. S. Morrison; and in addition to other special awards, all the men who had served with me since October, 1915, and had not been previously decorated received the Distinguished Service Medal.

In a quiet corner of the barracks I took leave of my very gallant crew. No applause, no cheers, when men have faced death together—this sort of thing is out of place. A finer crew no man has ever had the honor to command.



The Newest Fad in Education

Vocational Training and the Millions It Absorbs

MONTAVILLE FLOWERS

A FAD is what everybody does because everybody does it. Almost every phase of life is subject to the rage; sense, taste and precedent, comfort and cost—all fall before the fad; and as in dress, in slang, in music, and even in religion, so in education fads have come in and gone out, registering upon life results that range from high value to deep detriment. "Men dress their children's minds as they do their bodies, in the prevailing fashion," said Herbert Spencer. It is no proof of the merit of a new educational fad to find that the colleges, secondary schools, and the grades are all doing it.

Three such fads came and went in the twenty-five years between 1885 and 1910; one foolish but harmless one, with the basis of permanent good, and one positively bad. The first was the "object lesson," which swept the elementary schools of the country; its inane practice was finely caricatured by James Whitcomb Riley in his story of the peanut, which, funny as it was, especially when he read it himself, was not so funny as was the teaching of the time. The second was the rage of discussion called "The New Education," of which the central idea was the introduction of manual training, the first step in utilitarian education. The third fad was vertical writing, ushered in by the fine exhibits of the schools of England at the Chicago World's Fair in 1893, and by 1900 it had taken the country by storm. The old art was wrecked and the new one, too; the left slant was brought in to save the day—which made matters worse—and then a silent retreat to the old Spencerian system was begun. That fad produced a generation of the poorest penmen that America ever saw.

The latest fad revolves about two words: "vocation" and "guidance." We might say the coming fad, because it is not yet fully in, as is evidenced by the fact that

the meaning and the scope of application of these terms are not clearly defined even among its sponsors; nor is there accord in regard to the relative values of the old studies and the new work, resulting in various stages of transition and in diversity of curricula that are bewildering. On the whole, it has not affected rural communities, except as an agricultural high school dots the country here and there, maintained by Federal aid. Some cities, like Washington, D. C., have it not at all except as represented in a technical or business high school; others, like Los Angeles, are taken by it; others, like Cincinnati, steer a middle course that seems to offer enough of the good of the new without forsaking the proved merits of the old.

But beginning in Boston, where the idea was born, and passing westward into Kentucky and Kansas, where it has not disturbed the old régime except in two or three large communities of each state, there is a miscellany of objectives and accentuations; and although in the secondary schools of the cities where the experiment has had its longest vogue it seems to be conducted with sincerity, yet its meaning has not been caught by the students and has made little impression upon them. The present situation for the nation may be summed up in the statement of an official of the National Education Association: "The subject of guidance and vocational education is still in a confused and formative state in this country."

But it will become a fad, because all of the agencies to make it one have arrived. It has been given the impetus of special law and finance by the Federal Government in the Smith-Hughes Act, which established a Federal Bureau of Vocational Education at Washington and a state director in every state capital. These state directors and others in the field have coordinated all the guidance associations into a new national association that held its first convention in Louisville in December, 1926. A section of the National Education Association is devoted to it, it is ably represented by special magazines; courses of study in it are offered by universities; textbooks for teachers and students, questionnaires, filing card systems and records are on the market—such is the organization. What are the incentives?

Vast millions are to be spent in this innovation. The Federal Government appropriates $7,000,000 per year, the states duplicate the amount, local boards of education furnish facilities and equipment—and this represents but a fraction of its present cost. When the American Vocational Association adjourned at the close of its first convention its members went home, according to the statement of its president, filled with the urge to organize state and local associations to spread their enthusiasm. Everywhere the heads of schools or school systems are struggling to add the involution of this new educational turn to their pedagogical gymnastics. Here is the largest opportunity to expand the teaching field and teaching force ever offered to education. Underlying all, the vocationist is soundly converted to his faith that he has a full solution for the problems of education and occupation.

The word "guidance" is the root and trunk of the system. Its altruistic purpose is to help every child to find his life work and to choose the studies and training that will assure him success in it. It would make of every grade, beginning with the sixth or seventh year, a place of retail, not wholesale, life preparation; of the acquisition of special, instead of general, knowledge. As a prerequisite to its operation educators must chart three worlds: *first*, the individual capabilities of each child; *second*, the mental and physical essentials for success in every employment; *third*, the courses in knowledge and skill that will equip any child for his place in society, once designated. The first category includes the whole domain of psychology, the second includes the whole domain of practical affairs, the third includes the whole domain of pedagogy; it is the most definite but prodigious undertaking in the history of the theory and practice of education.

The goal of guidance is life work, how

to choose it, how to prepare for it, how to succeed in it. The processes and technique of guidance have developed new phrases in the parlance of the schools, and a brief review of them is essential to a full understanding of the subject. The groundwork for the choice of a vocation by the student is laid in the study of "occupations." For this a textbook, or little pamphlet, describing and illustrating the requirements, tools, work, and rewards of some one line, is used. These studies are supplemented by talks given by men and women who have been successful in their respective fields, and by visits made by the students to stores, factories, and institutions. To all this academic study the term "vocational guidance" is given.

This academic work the teacher must complement by a study of the child's capacities and bents. To discover these, some schools permit the students to try out two or three different lines of work, each extending over a term, these experiments being held to the early terms of his attendance. He is subjected to intelligence tests by the teacher, physical examination by physicians, and tests by experts in psychology; a record is made of his home life, his parents, brothers, and sisters, and their occupations, and what he has done in previous school work; upon this data the teacher or special advisor recommends to each student the courses of study and work that he should undertake, the lines of life work for which he should prepare, and, later on, the schools and colleges where he may go to finish up.

"The teachers, by various tests and records, assort the children and steer them into courses according to their abilities," said the head of this section of vocational education of a large city. To all this direction of the individual the special term "educational guidance" is given. As there are more than 500 occupations, some 3,000 industrial employments alone, or about 9,000 different jobs on the one hand, and on the other schools without number that offer courses in training for special ends, the guidance teacher must possess encyclopædic information, unerring powers of psychoanalysis, and intimate contact and acquaintance with every child.

The last statement is stoutly combatted by writers of textbooks on occupations; but it is apparent that the teacher is, herself, the first problem and limitation of guidance. "Our city is full of college graduates in education," said the director of vocational education, "seeking positions as counselors or vocational guides, who have no qualifications for the work. These girls, for they are mostly girls, are fresh from college where they have had courses in mental tests, occupations, etc., and feel that they are fitted for educational and vocational guidance; but they have had no world contacts; they have passed from the elementary school through high school and the university without a detour into experience; they have had no contact with the intricate complex of practical affairs, and after they get into the schools they will have no such contacts; how can they guide through what they do not know?"

However, the student so directed having made his choices, his training in them begins, and this training is termed "vocational education" or "vocational training," but there is much disagreement upon what may be included under these terms. For instance, manual training, manual art, domestic science, and domestic art, which have stood for more or less clearly defined school work, are called vocational education by some, vocational training by others, and are denied a place under either caption by still others, who claim that these courses are too elementary and too aimless; that originally they were tuned into the old régime, whose objective was mental development, and were keyed to the question, "How can we use these experiences to aid the pupils to think?" and that vocational training is a specific training of a particular person in the tools and technique of a particular vocation by which he is to make a living.

The vocationists have broken down the rigid rules of school attendance, found new uses for public school funds, developed new types of schools, and inspired a new grouping of the years of school life that

promises to change the whole classification and to give them new aims and new names all the way from the elementary to the professional school. Many can recall the recent day when the child who could not come to school all of the time was suspended for irregular attendance and could not come at all. Vocational education has reversed that and has created a school especially for him; the theory of part work and part school—a theory proved out with impressive results by the University of Cincinnati and by Antioch College—has been adapted and adopted by secondary schools; and the part-time secondary school, beginning at the end of the sixth year, is established as an essential factor in school organization.

Part-time schools are given names according to their specific functions: the "coöperative" school, in which sympathetic employers give opportunities to the students, and, whenever it is possible, such that they may experiment in the lines of their chosen vocations; the "continuation" school, for instruction to all not in the regular grades who wish to increase their knowledge and skill along special lines, and providing especially for those who have quit school before reaching the age limits or attainments required by compulsory attendance laws; the "trade" school, designed for apprenticeship; and the "night" school, available to adults of all ages as well as to youths who are trying to renew and patch up their mental equipments.

Getting jobs for children, or "placement" as it is called, finishes the machinery of the vocational scheme. The placement bureau is the outcome of the effort to find a solution for truancy among boys of fourteen or more who, having no guidance or assistance in getting employment, landed in crime and jail. Private individuals interested in this problem in Chicago in 1911 (and about the same time in Cincinnati, and before that in Boston) employed a leader to study conditions. He organized a placement bureau that four years later was taken over by the City Board of Education.

Its work was greatly advanced and enlarged by the enactment of compulsory school attendance laws, which required attendance at school until sixteen years of age and now in some states until eighteen, set a minimum of attainment of scholarship, rounded up and herded in the children who filled up the part-time and continuation schools, and forbade any employer to engage a child who did

EXPENSIVE EQUIPMENT IN A HIGH SCHOOL MACHINE SHOP

The fad of vocational education, says the author, has neither produced results nor justified the heavy burden it places on taxpayers.

not hold a certificate stating that he was physically able for the work and had met the school requirements. In Chicago 12,000 children were under such certification last year. When a child quits one job, the employer returns his certificate to the bureau, and the child must have another one issued before he can secure another job. Under this checking system the number of children under sixteen taken on by employers in Chicago has been reduced from 6,000 to 2,000 per year. This is benevolent service that has saved the day for many a youth and his dependents. But it is a salvage service and not the main works of the educational plant.

The old term, *in loco parentis*, had but one meaning a quarter of a century ago and that was defined in law that gave the teacher the powers of the parent in governing and disciplining the child while he was under the teacher's care—this, and nothing more. The assumption by the public schools of paternalism in such intimate and important matters as directing the choice of life work based upon intelligence tests set up by the schools, directing the choice of trades and business, placement in a job, the follow-up in the job, dealing directly with the employer of the child—all this, which is the distinctive field of vocational education, is a new function for the school or any other agency of government to assume; it marks a new era in both education and government in America.

But is this educational gun hitting the mark? Is the regular program of guidance in secondary schools not only confused in theory but ineffective in practice? It was the chief contention of those who introduced the régime of manual training that these innovations would interest boys who have no inclinations for academic studies and would tend to hold them in the school. Still broader claims for such results were made for the complete vocational program because of its wider scope, more practical contact with real life, and the exit of its product direct into industry. Has it done any or all of these things? What is the extent of the trend in secondary schools from the old-time studies to the vocational curriculum? How powerful a magnet are these departments to draw students from other departments to them?

Comparative figures tell little because of the enormous increases in school attendance and new classifications, but observation and opinion, as I have found it, may be generalized in such statements as the following, made by the head of vocational education in a city where it is being given full trial: "The departments and courses that you have enumerated have not proved to be such an attraction or such a magnet. For instance, one of our high schools is as finely equipped for all this work as any in the country; in making a study of it recently, I saw fine new shops equipped with lathes sufficient for forty students, but there were only three boys working in them; fine printing shops, but only three girls and two boys working in them; the girls are not filling up the departments of domestic arts and sciences. In fact, many of these courses with elaborate equipments would have few students in them if they were not required courses."

I found a magnificent high school in a city of 100,000 in the center of an agricultural district, where the agricultural interests by far exceed all other interests, in which the whole course in agriculture set up several years ago under the Smith-Hughes Act was abandoned this year, and the teacher, a graduate of the State Agricultural College, was dismissed, after three years of effort, because there were not enough pupils who applied for the courses to sustain the department.

Do the returns in educational values secured by thus forcing the issue justify the large *per capita* cost in vocational training departments? You can place forty pupils in a room with a teacher of mathematics, history, language, or civics, and she can teach them all; whereas twenty students in a shop is the maximum for one teacher, and from twelve to fifteen is the better group. A recitation room is equipped with simple desks that last a lifetime; a shop must be equipped with supplies and expensive machines that time

soon makes worthless; for to teach the *tools* of a trade is the first essential in teaching the trade, and these tools must be up to date. All this runs the *per capita* cost of vocational training departments far beyond that of other departments. Can a full régime of vocational education as regular equipment of all secondary schools be sustained? Will the vocational school live upon local taxation as other schools do, should Federal aid be withdrawn? Will it live on its merits when, to keep it alive, vocational training must be made required work in order to have the students take it?

In one questionnaire submitted to students whom I had addressed, the following questions were embraced:

Have you chosen the line you will follow after your education is completed?

If not, what are your inclinations? If so, what considerations led you to the choice?

What aid, if any, have you had from the high school in trying to make a choice of your life work?

What do you think the high school should do or could do to assist students in making a choice of life work?

Answers to these questions were given in writing by 10,000 seniors. If you will not grant that seniors who are ready to be graduated are competent to estimate the aid they have received from the school in the choice of life work, you destroy every basis for guidance. But if you grant that they are competent, you must take these answers at their face value on the principle that the test of the pudding is in the eating.

In a high school for girls, with full course in guidance, of 208 seniors, 147 said they had chosen their life work and 61 had not; of the latter, 47 named their inclinations and the remainder stated they had none; of the 147 who had chosen their life work, 116 gave the considerations that led them to the choice, but 137 of them stated, many of them with emphasis, that they had received no aid from high school in making their choices. In another high school in another city there were 200 seniors, of whom 108 were girls and 92 were boys. Of these, 54 girls, or exactly one half, and 56 boys, or 60 per cent., stated that they had received no aid whatever from the school in the choice of their life work.

These cases represent the general results derived from careful tabulation of all the answers received from schools where the full régime of guidance is in operation, where the failure may lie both in the idea of guidance and in the quality of the work done. It is apparent that taking intelligence tests, filling out blanks, talking a few minutes in class or even privately with teachers about their studies—what courses they will take, what schools they will enter—is not considered by the students as talking upon their life work, or directing it.

The verdict upon the value of guidance from the standpoint of the students who have had four years of it is found in their answers to the question: "What do you think the high school should do or could do to assist students in making a choice of life work?" From groups of seniors numbering from 200 to 400 each, taken from widely separated cities, there came constructive suggestions numbering from thirty to forty per group, and they are almost identical from all groups. These fall into three classifications:

First, on courses of study: the school should have more flexibility in the choice of subjects; should offer more of the practical subjects; should have fewer compulsory courses in purely academic subjects; the study of vocations should come in the senior year instead of earlier.

Second, on the attitude of school and teacher toward the pupil: the school should discover the aptitudes of the pupils and adapt the courses to these; there should be more sympathetic contacts between teacher and pupils; teachers should be more sympathetic with the backward pupils; every boy and girl ought to have some one in the school who would take him *seriously* into his confidence; vocation teachers should have more impressive personalities; teachers need to know their subjects better to interest the pupils in them; the teachers should not use

methods that prejudice pupils against the subjects they teach.

Third, on choice of life work: the school should not influence the choice; it should not assist in the choice; it can help but little, if any; it is already doing all it should try to do; every student must find it himself; it is the personal business of the student and his parents.

These facts indicate that the normal adolescent may have an interest in getting a temporary job to meet a temporary need, and an academic interest in studying about a myriad occupations, just as he has in studying about a myriad of other things that are new to him; but he seems to have little inclination to choose his life work. Of 54,000 students, only 40 per cent. state that they have talked to their parents upon the subject and only 5 per cent. to their teachers. That serious depth of mind that turns to life work does not come to the surface of the student's consciousness until after sixteen years of age; and even then, unless he is driven by circumstances, he has no stomach for that task. Except in cases of extraordinary gift of genius that points him a clear way, he is likely to wait long and to change his course many times.

Such conclusions are established by the results in vocational education at Antioch College, which has taken up the subject with balanced objectives and superlative care and patience. There are few who go to Antioch except those who have already chosen a vocation or have strong leanings toward one. Yet Antioch says that, after the careful experiences of these students in coöperative courses during six years, "three fourths of them change the choices they had made when entering because their earlier choices lacked the necessary basis of judgment and experience." That being true, the question may well be raised against pressing hard upon the subject in the high school, particularly during the tender years of the junior high school, where mistakes in "assorting and steering" children may be irreparable.

But the movement has developed one institution—the trade school—to which these considerations do not apply. When I asked W. S. Kienholz, head of Vocational Education of the Public Schools of Los Angeles, the question, "What is the trade school?" he answered, "Come and see," and took me to the "Frank Wiggins," the latest development of its type. It is housed in a new $1,500,000 eleven-story building, in architecture resembling an office building, and opened its doors on April 28, 1927. It was developed from the seed planted by Mrs. Kienholz in 1918, to provide a means of livelihood for the wives of soldiers who were killed or incapacitated in the war, when she established a school of power sewing and garment making. Now it offers training in ten distinct lines and seventy vocations.

When Mr. Kienholz drove his car into the automobile repairing department of the school, I asked him four questions: "What do you do here? Who come here? How long do they stay? Where do they go after they leave?" The answers to these questions give a new definition to school and create a new concept in free education. For this place forgets and ignores all of the old school eliminators—entrance requirements, age limits, time of attendance, aims of work, and completion of courses. These students are not there for languages, science, or mathematics. They are there to get working assets to exchange for a living. It is practically a school without books. Its major idea is apprenticeship, for when a student walks from its doors direct to an employer with a card stating that he is able to make good in the job he is seeking, both school and employer know that he is ready to do so. They go from this school directly into industry, which absorbs their full product.

I saw there boys and girls from sixteen to twenty and on up to men and women of forty-five, all getting ready to make a living in some employment. These were, or once had been, children who had dropped out of the seventh grade, or were flunked out somewhere farther along the line, or had failed to cash in on their education and enterprise. They had discovered in the jostle of workers that they needed to learn some definite way to make a living and had entered trade preparatory

courses; or they had found in the hard world of competition that if they had more skill in their trades they could get more work and higher pay and were taking the trade extension courses at night.

Among them were one-time college students and graduates, thirty years old and up to fifty, who had found that their percentages in academic studies had no cash value in exchange for clothing and the needs of their children; gray-haired women working in power sewing rooms to learn a trade—of 531 women in this department last year there were 16 college graduates and 17 others who had spent from one to three years in schools beyond the high school.

"The finest reward for our work," said Dr. Kienholz, "is the happiness of those who here for the first time acquire a way to make a living, people who have never had a victory. They had no victories with what they learned at school, no victories in the mastery of anything that puts foundations under men; so that when they go from here and get definite employment and sure pay, it is the first victory of their lives, and the joy of it transforms them; to see their joy after they have lost their fear is the best reward we get out of our work." From six weeks to two years are required to produce such results; last year 10,000 applicants knocked at the doors of their day school.

Until ten years ago, the educational system of the United States, whatever its shortcomings, was functioning uniformly and smoothly. There were eight years in the elementary grades, four years of secondary school, and four years in college or university, with such mortality in attendance along the way that of 100 pupils in the fifth grade, 13 reached the fourth year of high school and 2 the fourth year of the college. Students were in demand; many of the private institutions of college grade had agents in the field soliciting for them, and state institutions had plenty of room for more. And it is well within the memory of many teachers still in the schools when high schools in small communities were few, with two-year or three-year courses, and whoever attended one felt himself an aristocrat and wore a high hat. A few of these went to college, and when one came home with a diploma he belonged to the intellectual royalty.

All this is now in the discard. Education has been democratized. In 1915, college enrollment was 303,000; in 1924, it was 664,000—a net gain of nearly 120 per cent. In 1917, high school enrollment was 1,600,000; in 1927, it was more than 4,000,000, exclusive of the junior high enrollment—a clear gain of more than 150 per cent.

For the first time in our history the universities have been flunking out without mercy and turning back the increasing thousands. Spontaneously, two new institutions have appeared: One, the junior college, to take care of the lower half of university work, an institution as necessary and as sure to be a part of all local educational outfits ten years hence as the four-year high school was twenty years ago. There are more than 300 of them now, some of them already developing four-year courses. The other, the municipal university sustained by general tax upon the city, as conceived by Cincinnati a generation ago, completes the full equipment for education of the up-to-date city.

Now enters vocational education to complicate these changes in objective and in redivision of school years, resulting in the present confusion in secondary education, which the Federal Bureau of Education pronounces "akin to chaos." Out of this confusion what will survive, what will issue, is problematical. The trade school and the placement bureau, which render special social services, will hold fast so long as society needs them. But unless the ideas of guidance can be worked out more practicably, unless there is more accord among educators on the relative values of cultural studies and vocational work, unless the latter can be supplied without large special subsidy and *per capita* cost, the cultural objectives of education in secondary schools will again emerge, and the dominance of this latest fad will be lost in the sum of great readjustments.

Billions for Pensions

What America Has Done for Her War Veterans

RICHARD BARRY

NEARLY half a million people (490,000, to be more exact—one cannot be absolutely exact because the number varies)—draw pay checks each month from the government because of military service in defense of the United States, or because of dependence on such persons. These concern only wars fought prior to 1917.

Searching through these rolls we find many curious cases. Of all, this one struck me most forcibly. It is the case of Francis E. Warren, who receives on the first of each month $65. In an office on the second floor of the Interior Department, where the Pension Bureau is housed, I saw this name one morning. That afternoon I sat in the gallery of the United States Senate and looked down upon a white-haired gentleman in evident health, the Senator from Wyoming, Francis E. Warren, Chairman of the Senate Committee on Military Affairs, father-in-law of General John J. Pershing.

The same? Yes. Francis E. Warren was born June 20, 1844. In 1862, at the age of eighteen, he enlisted in the 49th Massachusetts Infantry, served as private and noncommissioned officer, and was honorably discharged in 1865. Congress voted him the Medal of Honor for gallantry at Port Hudson, Louisiana, when Admiral Farragut attempted to pass up the Mississippi in March, 1863.

Senator Warren has never claimed any physical disability due to his military service. After the war he went west and became in due time a prominent and influential citizen of Wyoming, which state he has long represented in Congress, where to-day he is the only Civil War veteran. Financially he is thoroughly independent, for, in addition to the $10,000 per annum paid him by the government as a salary for his services as Senator, he possesses many millions in his personal estate.

Why should Senator Warren receive a pension? The answer is analogous to one made by President Coolidge to the Director of the Budget recently during an economy session. The story is one I heard in Washington and may or may not be true. In any event, it ought to be true. The Director of the Budget remarked, "We shall begin our cutting at the top. Mr. President, cannot you pare down somewhat that annual allowance of $25,000 for the maintenance expense of the White House?"

After due cogitation, the cautious executive from Vermont replied, "No, I am but a temporary occupant of the Executive Mansion. We must consider my successors and the dignity of their office. It might embarrass them to establish this precedent."

In a similar spirit Senator Warren accepts $65 each month from the Treasury of the United States. Neglect or refusal to do so might embarrass other veterans, might tend to throw some shadow of doubt on the validity of the principle that has been behind the bulk of pension-giving since 1890.

This principle of the service pension is that it is bestowed, not for invalidism due to war, nor yet as a bonus for service, but as the endowment of a trust fund established by all the people to recompense veterans for investing some of their best years in the task of preserving a political entity that would not be functioning to-day if they had not made that investment.

Senator Warren is as much entitled to that income, accumulated by him, though unknowingly, between his nineteenth and twenty-second years, as a soldier, as is John D. Rockefeller to whatever he gets

from the sum he saved as a bookkeeper between his nineteenth and twenty-second years. Such is the theory of the service pension.

As a banker puts it: "The service pension means that the government has created for each veteran a lifetime estate of $15,600, whose principal he may not touch, but guaranteeing him the interest at 5 per cent., payable monthly. This in lieu of his youthful investment of time and strength, and his sacrifice of other opportunity."

Accepting this principle, Senator Warren is just as much entitled to the income from his governmental estate of $15,600, as he is to his salary as Senator or to any of his personal holdings. Not to claim it would be to impeach the principle.

Only a little more than half (256,000) of the pensioners are surviving soldiers. The others, 234,000, are widows, minor children, and dependent parents. Minor children are entitled to pensions under certain conditions.

Of the veterans the greater number are of the War with Spain. These increased 25,000 last year and are now 158,000. At the same time the Civil War veterans decreased 15,000 and in March, 1928, for the first time fell below 80,000. How much longer will there be veterans of the Civil War? The youngest of them is now more than eighty, and many are more than ninety. We may judge from the past, and we may add new calculations that did not enter before.

Judging by the past, we find that the last veteran of the Revolutionary War, Daniel F. Bakerman, died April 5, 1869, aged 109½ years, eighty-six years after the close of the war. Ninety years after the close of the War of 1812, Hiram Cronk, the last survivor of that war, died May 13, 1905, at the age of 105 years. It is now eighty years since the close of the War with Mexico, and we are paying pensions to five soldiers of that war.

If history only repeats itself it will be at least a quarter of a century before the last survivor of the Civil War will have responded to the final call. But there is every reason to believe that this period will be considerably lengthened, perhaps doubled, or even further extended.

The actuary of a life insurance company said to me: "I expect that the first centenary of the firing on Fort Sumter, which will be celebrated in April, 1961, will have present a number of veterans of the Civil War. For these reasons: to begin with, their numbers greatly exceed those of other wars. Then, they lived their mature life in a period when life extension had vastly improved, when sanitary means of living were better understood, and when new inventions greatly extended the intellectual horizons of the common man, keeping them abreast of the times and alive with current interest. Better than all, the beneficence of the service pension came to them before they were decrepit to relieve them of poverty with its shame and worry, for it is only the past generation that has adopted for old soldiers the theory of deferred endowment, which is intellectually sustaining and spiritually ennobling. Because of these factors the veterans of the Civil War will doubtless break all records of longevity established by veterans of previous wars."

This may seem even more probable when it is known that pensions are to-day being paid to two women as surviving mothers of soldiers of the Civil War. Yet that war came to an end sixty-three years ago, and the youngest survivor who fought in it is more than eighty. These two women are Mrs. Samantha Rover Button, of West McHenry, Illinois, ninety-six years old, and Samantha Farrer, a colored woman living at Athens, Alabama, who was born a slave, does not know her age, but is probably more than one hundred.

It seems strange that nearly half the nation's pensioners are women, although two were placed on the rolls because of service as soldiers while masquerading as men. Except for these and the few mothers and minor children enrolled, all are receiving pensions as widows.

Pension frauds have been practiced in the past, but probably none has ever been so imminent constantly as the one that might be perpetrated by a designing young woman in marrying an elderly veteran to

get the pension that would accrue to her as his widow on his death. Fifteen and twenty years ago every old soldiers' home was infested by these harpies. On June 27, 1905, Congress passed a law declaring that no pension would be paid to Civil War widows whose marriages came after that date. In the case of Spanish War widows, the date of limitation as to marriage is September 1, 1922; for Indian War widows it is March 4, 1917. This has somewhat dampened the ardor of certain youngish women. A similar law had been passed concerning widows of veterans of the War of 1812 on March 9, 1878. Evidently this has been a perennial menace to the Pension Bureau.

However, *to-day* fourteen widows of soldiers who fought in the War of 1812 are drawing pensions. The list of their names, addresses, and dates of birth reveal that the oldest was born fifteen years after the war was over, and the youngest forty-seven years after the war, while they must have been, on the average, at least half a century younger than their husbands.

The last Revolutionary War widow died only twenty-two years ago. She was Esther S. Damon of Plymouth Union, Vermont, who died November 11, 1906, at the age of ninety-two.

It is not impossible that the government of the United States will be paying pensions to the widows of veterans of the Civil War in the twenty-first century. A girl of eighteen who married such a veteran during the first half of 1905 would have to live only into her hundred-and-thirteenth year to make that record.

While matrimony has been expensive to the Pension Bureau it has also occasionally been the means of saving good sums for the government. There are two cases that are responsible for nearly eight thousand dollars each, of saving.

The first is that of the mother, Mrs. Samantha Button, already noted. As the dependent mother of Clinton D. Rover, a private in the 8th Illinois Cavalry, who, at the age of sixteen, died of typhoid fever after four months' service, she was granted a pension of $8 a month on December 17, 1864. In 1870, the then Mrs. Rover married James Button. At once her pension terminated. This husband, her second, died in 1899, but she went until December 11, 1926, before again applying for a pension by virtue of her son lost sixty-two years before. This was granted, but if she had not married Mr. Button the government would have paid her an amount of more than $7,500 in the intervening years.

The other case is that of Mrs. Martha L. Tilton, of Sanford, Maine, widow of Alfred L. Tilton, of the 15th Massachusetts Infantry, who died in service in 1862. Awarded a pension in 1864, she drew it until 1870. Then she decided to remarry, though notified that doing so would cancel her claim on the government. She did marry, however, and her second husband lived until 1923. Two years later she reapplied for her pension, and the reinstatement was granted. She is now again on the rolls. The Pension Bureau figures that through her second marriage Mrs. Tilton saved Uncle Sam in fifty-three years $7,897.

Among the nearly eighty thousand Civil War veterans there are many, many cases of prolonged domestic felicity. These are not revealed until death requires that the widow come forward to substantiate her claim. The record for domestic fidelity known to the Bureau until two years ago was that of a veteran and his wife living in Oklahoma. They had been married and living together constantly, except for his military service, for seventy-three years.

Then Mrs. Lydia A. Hunt, of Green Harbor, Massachusetts, applied for a pension. After proper investigation it was granted, and she now holds the record for length of matrimonial life, as known to the Pension Bureau. Mrs. Hunt is the widow of Robert S. Hunt, who enlisted in the 23rd Massachusetts Infantry in October, 1861, and served until May, 1865. He died at the age of ninety-six, in 1924. It was proven that the couple had married on November 26, 1849, and lived together continuously until his death in Plymouth County, Massachusetts, with the sole interruption of his three and one

half years' service in the Civil War. They were married seventy-four years, eight months, and thirteen days.

Widows who were married before or during the war are entitled to $50 a month. To state this more precisely, following the terms of the law: "Widows who were the wives of their soldier husbands during the period of their service in the Civil War are entitled to $50 a month." Those who married after the war and before June 27, 1905, are entitled to $30 a month. The law makes no distinction between those who have been loyal wives for many years, in cases nearly half a century, and those married comparatively recently.

Bearing in mind that perennial menace to the validity of the pensions—the youthful widow—the last Congress, in passing a bill raising the rate to widows married after the Civil War, inserted what would appear to be an effective clause, making it possible for only those "widows who have attained the age of seventy-five years" to receive the benefits of this latest pension increase, which is to lift it from $30 a month to $40 a month in this class.

President Coolidge signed this bill on May 23, 1928, thus tending to temper the severity of his previous reputation, for no President has been so cautious as Coolidge in increasing allowances to veterans and their widows. It is said to be due to his caution, exerted unofficially, that Congress inserted the "seventy-five-year-old clause," thus gaining his signature. Even with the "seventy-five year" restriction this latest beneficence from the government will increase the annual pension distribution about $20,000,000, or approximately a 10 per cent. raise on the $200,000,000 now being spent.

Much has been said against pensions. When the World War came so much feeling existed against them that a new device of so-called "insurance" was instituted, whereby it was believed that the pension "evil" would not follow that "modern" war. Yet to-day the Veterans Bureau in Washington (devoted wholly to World War affairs) is one of the conspicuous buildings in the capital, while the Pension Bureau is modestly housed on part of one floor of the Interior Department.

In the ten years that have elapsed since the World War nearly five billions have been paid out in gratuities (they are not called pensions, but awards) to survivors of the last conflict in which the United States participated. This nearly equals the whole sum paid out in about sixty-five years to veterans of the Civil War and their dependants, which totals now a sum between six and seven billions.

And World War veterans to-day are getting nearly three times as much in total distribution as Civil War veterans, the annual allotment for the former being $560,000,000, against $200,000,000 for the latter. And the Civil War distribution has long passed its peak, while that of the World War is only beginning to approach its high mark.

It was with knowledge of these facts that Mr. Coolidge (who has been less generous with pension bills than has any other President) said at Gettysburg on Memorial Day: "All the countries on earth in all their history, all put together, have not done as much for those who have fought in their behalf as our country alone has done in the past fifty years."

THE EIFFEL TOWER AT NIGHT

Citroen

And How He Americanized the French Motor Industry

JAMES C. YOUNG

STAND UPON the heights of Montmartre any clear night and look across the roof-tops of Paris, falling away a long two miles to the famous Eiffel Tower. All around lies the realm of mystery, the Montmartre of artists, poets, and Apaches. On the pinnacle of the hill, austere in its white marble, rises the Basilique du Sacré Cœur, finest of modern cathedrals.

Suddenly the darkness is riven by lightning, or what seems to be lightning, that strikes the distant tower. Instinctively the ear strains for sound of the crash, when the steel mass will lie in ruins. But no crash results, no peal of thunder follows. The lightning flash was merely the first phase of an illusion such as the eye never saw before. For a minute this lightning plays up and down the thousand-foot tower, visible 40 kilometres distant. Then the white electric bulbs give way to red, the tower is in flames that spring from the base, crawling upward in a red surge. When they reach the top and the tower looks ready to fall, a charred and twisted mass, the illusion takes another turn.

Slowly a fountain, achieved by white bulbs again, spurts at the bottom and drenches the flames above. This third phase of the illusion leaves an onlooker breathless, but he is now to see a shower of stars fall over the tower, stars in six colors, brilliant against the night. As they wink out one by one a deluge of comets follows them, chasing one another over the tower in magical fashion. A red patch forms at the top, grows larger, and resolves into a capital C 30 metres high. Next comes an I, succeeded by five more letters, spelling the name "Citroen." Two hundred thousand lamps are used in the full illumination.

Such is the world's greatest advertisement, for which the French Government receives a record revenue. Neither the government nor André Citroen will divulge the price, though both agree that it is as high as the tower. Post-war France, seeking revenue everywhere, could not resist the automobile maker's bid to convert a national monument into an amazing spectacle—for the wider renown of the Citroen car. Every visitor wants to see the tower, the tallest of structures, and since M. Citroen has decked it out in electrical illusions his name is one that no visitor ever will forget.

M. Citroen is perhaps the most interesting personality on the continent of Europe to-day. Certainly he is the foremost figure of the Old World in everything that pertains to the modern day. Americans know him best as the "Ford of France," a description fairly accurate, though M. Citroen has fame enough of his own without borrowing the luster of another name. But he has brought a vigor, a concentrated method to his business that Americans recognize with a sense of home. Any one familiar with European business will best appreciate the meaning of this vigor, since business in Europe still takes two hours off for lunch and does some other odd things.

If anybody had doubted that M. Citroen has imagination—which no one surely ever did—he proved it by sending a fleet of his cars across the Sahara Desert, mounted on caterpillar running gear. Thus the automobile conquered the shifting sands, opening new and farther horizons in motor transportation. Not satisfied with one achievement of this kind the genius of the French motor world started a second expedition of eight cars from Algeria through central Africa. That expedition was an epic, winding downward to the edge of Nigeria, thence by equatorial Africa to

the Belgian Congo and British East Africa. Finally it divided into four groups that covered a broad territory, going south to Cape Town and joining up again in Madagascar.

What the first expedition had demonstrated the second proved conclusively: the motor car can go practically anywhere, if not on its own wheels, then by means of the crawling device developed during war days. One of the trans-desert cars now rests in the museum of the Invalides, that storehouse of French achievement. As for the Citroen enterprise, it is written high on the scroll of the motor world.

Sitting behind a flat-topped desk in this office on the Quai de Javel, M. Citroen has much in his bearing to suggest the American business man. Like many of his countrymen, he is slight of stature, with a quick, nervous manner that reflects rapid concentration and a lively play of mind. A caller finds the office door controlled by an American doorcheck at the top, to prevent slamming. An array of push buttons marks the motor man's desk. The click of typewriters and adding machines can be heard every time the door is opened. Beyond the offices lies the big motor plant, the nearest approach in Europe to mass production on the American plan.

The career of M. Citroen has been an eventful one. War brought him opportunity, and it is since the war that he has forged ahead so far in European industry. Born in Paris no longer ago than 1878, he saw considerable military service as a young man. Then, having a technical education, he turned to engineering activities and by 1908 had charge of an extensive automobile reorganization involving the *Société d'Automobiles Mors*. In 1912 he came to America, catching his first glimpse of the industrial world that was to influence his own future activities.

Then, 1914 brought war and the mobilization of M. Citroen as an officer of artillery. Plainly, he was too valuable a man for routine services. But it was M. Citroen himself who proposed to the Minister of War that he be allowed to begin the manufacture of shells on a broad scale. By January, 1915, the plan was under way. American machinery entered largely into his calculations. First he made 10,000 shrapnel shells a day, then 15,000, and then 20,000; and the production of heavy artillery shells followed in due order. Finally the plant employed 13,000 workers and made 55,000 shells a day. They were shipped to every Allied country and went far to win the ultimate victory. M. Citroen also took over organization of the government arsenal at Roanne, contributing largely of his technical skill wherever needed.

With the end of the war he shifted his activities once more to automobile manufacture. The new day was to bring the motor car into universal service. But it was no slight matter to lay aside war problems, convert plants, and begin virtually a new enterprise. In 1919 the Citroen organization was able to make only 30 cars a day—a figure that has since grown to 400. The beginning had to be made in the face of impressive difficulties. There was little or no market for cars, technical operations required much time and attention. Capital was scarce as well, and weary Europe uncertain where to turn.

But the Citroen enterprise prospered in one way and another. The man at its helm had already determined that mass production of motor cars offered the only means for Europe to compete with America. And could he be the first to engage in such production on the American plan, then he might well lay claim to a sizable share of the Continental trade. In 1923 M. Citroen came overseas on a trip that was to be epochal both for him and for the European motor world. It was on that trip that he learned about such things as doorchecks to keep doors from slamming. And even the most casual inspection of his plant would show that he was a close and careful observer while in America. Much of his mechanical equipment came from American workshops.

Step by step the Citroen plant has become the principal motor industry of the Old World. And step by step its sales organization has kept pace with manufacture. The company has three large and two smaller establishments in the environs of

Paris, the principal plant being on the Quai de Javel. Throughout this plant operations are carried on in the way made familiar by Ford. A conveyor system transplanted from Detroit makes it possible to manufacture automobiles *en grande série*, the French equivalent of mass production. Everywhere the touch of American efficiency can be seen. There is something heartening about the sight of American punch presses and such equipment in a far land. It works with a snap and decision pleasant to view.

ANDRÉ CITROEN

Any engineer would feel his heart warmed by a view of the Citroen plant. Observation would show him that the plant works easily. All of its parts mesh well and seem in harmony with one another. The French worker is no less interesting than is the French plant. He has an offhand way of doing things that might strike the American eye as inefficient. But his manner is deceiving, for he has much skill in his fingers and no little knowledge under his hat. He drives a rivet carelessly, as an artist might drive it, but examination will show the rivet to be deep in its socket when he has completed the job.

No experiment in the psychology of industry could be more interesting than this adaption of American ways to French temperament. M. Citroen operates on the basis of mass production, but it is a modified scale, having less of the iron rule and the immovable obstacle than we know in American industry. For instance, the French worker never would be contented to spend his life doing one job. He has something of the artist about him; above all, your Frenchman is a human individual. He dislikes doing the same thing twice in the same way. If his task is no more than tying up bundles he ties them differently.

Therefore mass production *à la Citroen* is considerably more humanized than mass production, American plan. The French worker, unlike his American fellow, changes about from one job to another as occasion offers. His superiors believe that such diversity makes him a better workman. Certainly this bit of variety keeps him more contented. He does not develop the "grouch" common to machine industry. Neither does he get the leaden, beaten look in his eye that can be seen in so many American plants. Instead, the French worker is generally cheerful. He takes pride in his work. He has an understanding of economy in materials and the use of tools that no American ever thought about. Take him by and large and he is a first class workman.

The Citroen plant has such innovations as time clocks. At first they were looked at askance. What did those clocks mean, with their little cards and that punching machine? Was the French workman to lose his liberty? Right there a superior kind of diplomacy made the French workman understand that these clocks were a measure of merit. If a man liked his job and wanted his company to prosper he was going to be on time in the morning, and the clocks would keep his company informed. It would know how to measure his merit. That made the thing different. Nowadays the Citroen worker gets to his lathe promptly because his pride is in it. And

pride is the strongest motive in the French heart.

Wherever the eye turns in this world created by M. Citroen it finds much to satisfy. Blast furnaces, foundries, machine shops, body works—the whole operation is complete save for the manufacture of a few parts. Great cranes pick up vast weights as easily as they were ever picked up in America. The furnaces have the same roar when their red mouths are opened and the flames burst forth. Short, stocky men, bare to the waist, black-moustached and bright-eyed, pour the metal, tend the fires.

In the machine departments the conveyor system is promptly reminiscent of Detroit. Apparently it moves as fast, though without such evident strain to keep up by the men employed. But it is modern industry in one of its impressive phases. Citroen cars are assembled with the dispatch and thoroughness made famous by Ford. Yet there is always the French touch, the "something different" that marks the race. The man who drives the final stitch in the upholstery, or applies the last daub of paint, does it with the air of one who has accomplished something worth while. *Vive Citroen!*

This spirit of the nation and the plant extends to the distribution department. If we must employ the comparison once more, it also is conducted on the American principle. No other European organization quite equals the Citroen selling department. At present four assembly plants are operated, in London, Brussels, Cologne, and Milan. Warehouses and sales agencies extend all over northern Africa and Europe and well into the Orient. Many of these are direct agencies and each of them has the mark of the Citroen character.

Walk along the Unter den Linden in Berlin or the famous Piccadilly in London and the Citroen establishment soon greets the eye. The branch in one city might be transferred to the other and no one would be wiser. Both of them—all the Citroen branches—have a clean-cut, plate glass character more typical of Broadway than of Europe. The various cars stand upon the

ON VACATION AT DEAUVILLE

M. Citroen is riding in one of the low-platformed busses that he donated to the fashionable resort to carry bathers across the mud flats. These machines are similar to the caterpillar Citroens used in crossing the Sahara Desert.

floor inside, each neatly halted above its drip pan. The name on the window of every branch is painted in similar letters. The Citroen symbol stands forth prominently.

It is this distribution department that has made it possible for the Citroen organization to produce and sell 400 cars a day. That number may seem small compared to the 10,000 a day capacity production of Ford when running full time. But it is large for Europe, where the tradition of small plants and individual products still adheres. Also, it is well to remember that Europe lacks our buying power, or anything like our buying power. Only a man of "good position" can hope to own an automobile.

Another branch of the Citroen activities extends to taxicab companies in Paris, Marseilles, Lyons, and a half-dozen other cities of France. Here is a shrewd stroke of business, organizing the companies to buy the cabs that M. Citroen wishes to make. About every third cab in Paris has "Citroen" boldly painted upon the body. Its light cream color is as familiar on the boulevards as the yellow cabs of America—and much more attractive.

The personnel of this organization runs upward of 30,000 men, a figure apparently high for the daily production of 400 cars. And it must be admitted that the counterpart of American mass production is not geared so high. But the typical American plant producing 400 cars daily operates more largely as an assembly plant, while the Citroen organization produces almost everything that it uses. There also would seem to be more labor by hand, especially in the simpler operations.

Only personal acquaintance with Europe could make plain the extent of M. Citroen's innovation in French industry. The whole of Europe, and France in particular, is a world of traditions. The visitor need walk down but one block or through one village to see how this law of tradition endures. And the oldest tranditions of all involve working principles. Guild laws are still living customs if not practical statutes. The French worker has always been a strong individualist, given to doing things his own way and generally in the way of his fathers. Machinery has a place secondary to hand labor in French crafts, when such crafts in America are wholly—or almost wholly—turned over to machinery. The manufacture of shoes might be cited as an illustration.

Therefore, when M. Citroen introduced high-powered, high-geared machinery, along with a conveyor system and typical production methods of American plants, he engaged in an undertaking of the first order. Above all, he had to consider the psychology of his workers. One failure meant total failure. Once the workers' collective mind condemned his plans, he would have troubles indeed.

Without the war such an industrial revolution might have been impossible. But the war quickened efforts in France as they had not been quickened for half a century. The Citroen organization rose to a great effort in time of need. After the need that spirit was carried over to peacetime reconstruction. It has now flowered into the model organization of Europe, comparing well with the best in America, and adding not a little of its own to the general excellent result.

M. Citroen, at fifty, emerges as the first industrialist of Europe. Last year he sold more than half of all the motor cars marketed in France, and he has successfully invaded the English, German, and Italian fields. Even tariff walls have not kept down his competition. It is one of the odd aspects of things European that automobiles in France bear a 12 per cent. luxury tax, making the home price about as high as it is in England, plus tariff.

None of the German or English automobile makers are producing so many cars as M. Citroen or distributing them over so wide a field. His sharpest competition has come from American sources, but recent tariff adjustments are expected to favor the French producer on the whole. In any event, he may be depended upon stoutly to defend his hold on the markets. And since M. Citroen has shown more imagination than is granted to most men, it may be expected that he will have his own and original means of meeting competition.

Knights of the Air

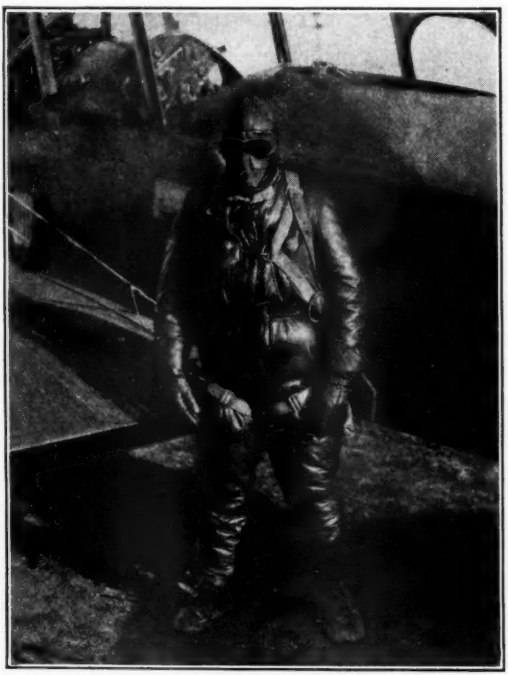
Significant Achievements Since the Armistice

LESTER J. MAITLAND
LIEUTENANT, ARMY AIR CORPS

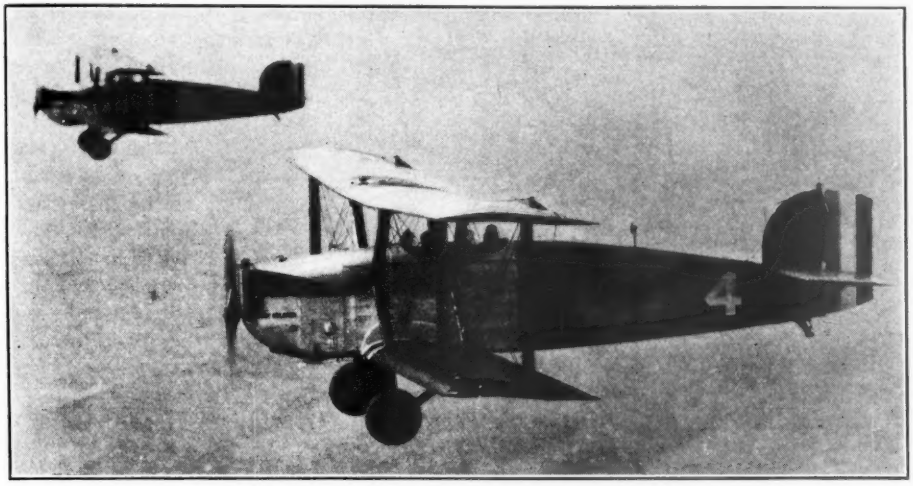
TWENTY-FIVE YEARS have passed since man's first successful flight. The quarter-century of American aviation that in 1928 lies behind us falls into five distinct cycles, each of which covers a period of five years. The first of these cycles begins with the initial flight of the Wright brothers in December, 1903, while the third comes to a close in November, 1918, when the signing of the armistice brings the World War to an end. The two remaining cycles, which lead us up to 1928, represent a ten-year period during which aviation has gone through two major phases of development—military and commercial—during which the airplane, usually against odds, has time after time demonstrated the superiority of speed over space.

No sooner had the war ended than the plane set out to prove that it was as valuable and as essential in peace as it had proved to be in war. But, as things turned out, it had a difficult row to hoe. After more than fifteen years of aviation, the American public was far from ready to accept the airplane as a vehicle that stood side by side with the railroad, the automobile, and other members of the transportation world. It was still *persona non grata* in commerce. There were no airports, no airways, no air maps, no air routes, and no air transportation lines to speak of. America, the land that gave aviation to the world, was still as far behind the times in civilian and commercial flying as it was before the war started.

The public, too, was apathetic toward aviation. When it thought about airplanes at all it was as things in which romance and recklessness were component parts. The popular attitude toward aviation was virtually a renaissance of the spirit of the old exhibition days with the slightly encouraging difference that where, during the hectic years, the public was satisfied to stand on the ground and look, thousands were now willing to take a chance and fly. And, to tell the truth, most of those who flew in those early post-war days in al-



SEVEN AND ONE THIRD MILES IN THE AIR
Lieutenant John A. Macready dressed for his record-breaking flight, during which he attained an altitude of 38,704 ft.



"THE GREATEST FLIGHT IN HISTORY"

The *New Orleans* and the *Chicago* were the only planes out of a total of four to complete the flight around the globe.

most any one of the hundreds of planes owned by barn storming gypsy pilots did take a chance. There were many accidents, many deaths. However, considering the equipment, it is really remarkable that the loss of life and limb was no greater than it was.

Gypsy flyers came into existence during the spring and summer of 1919 and kept multiplying so rapidly that it seemed as though they would crash into one another —which many of them actually did. They came from the ranks of pilots who had been discharged from the military services in the course of demobilization, or they were men who had attended Army and Navy training schools, where they had either qualified as pilots or had been washed out because they failed to reach the standards a flyer had to attain before he could get his wings. But in those days a pilot's license was not required, with the result that a pilot was as good as he talked, and some of those gypsies were first-class orators.

The government, which only a few months earlier had labored day and night to obtain as many airplanes as it could, suddenly found itself with more ships than it could possibly use. The outcome was that in no time at all the market was flooded with training planes and other ex-military aircraft, which were good enough when they left government hangars but not quite so dependable after they had been in the hands of gypsy flyers for a time. Gypsies had no need of hangars because they were always on the go, and I regret to say that most of them did not have the respect for their ships that every pilot is supposed to have. The result was that sun, rain, and storm did their work on fabric and structure. In countless instances, these elements served as advance agents of death.

The gypsy pilot, like his valiant forerunner the exhibition flyer, was picturesque. But when that is said all is said, because, as a class, he is responsible for the tardy development of American air-mindedness. He flew when he was able to and earned his "five dollars for five minutes" whenever he found passengers willing to go up. It did not matter if his motor was skipping, his struts shimmied, or his rudder was loose. He flew his "crate" as long as it would hang together, with supreme disdain for consequences. At first he did a land-office business. His flying field was any handy cow pasture or town lot, his office was under his helmet, and his repair kit contained a hammer, some hay-wire, a screw-driver and a wrench. He flew, lived, and moved at a reckless and restless pace—a happy-go-

KELLY AND MACREADY

On May 2–3, 1923, these men completed the first non-stop, coast-to-coast flight. This feat hastened the day of transoceanic flights.

lucky adventurous soul who took things as he found them. A fellow who, in his way and day, was a Knight of the Air, who made many a girlish heart beat a little faster and many a boy wish that he, too, could live the life of a gypsy pilot.

But as time went on, as scores of pilots and passengers perished, as gypsy planes turned out to be "flaming coffins" and "suicide planes," the public began to look upon pilots with distrust and upon airplanes with suspicion. The gypsy pilot not only destroyed his own business but also created fear of airplanes in the public mind; planted a seed of misunderstanding of the real promises of aviation that grew so rapidly that an extensive campaign of education was required to restore public faith in the airplane and to win the active public coöperation without which commercial aviation can neither survive nor make headway.

It would be grossly unfair to say that all the pilots of the early post-war period belonged to the gypsy species. There were any number of men who had, or who obtained, capital that enabled them to establish permanent flying fields, where equipment was properly housed and cared for by expert mechanics. These men, even though they represented a microscopic minority among commercial flyers of their day, really laid the foundation upon which our present magnificent structure of commercial aviation has been built.

Like all pioneers, they had to take the bitter with the sweet, and most of them fought a terrific up-hill battle for existence. They suffered under the handicaps imposed upon commercial aviation by their more reckless and irresponsible fellow flyers, and for many years some of them hung on with a tenacity seldom found in other branches of business. They knew that some day aviation would come into its own; and it must be said of them that in the efforts to bring that day about they put their shoulders to the wheel with unselfish zeal and unflagging heart.

The job of educating the public to the true value of aviation and of demonstrating in the most practical manner that the airplane is not only an important branch of the defenses of the country but also a valuable vehicle of commerce, fell largely upon the Army and Navy Air Services, because they were the only organizations that had the planes, pilots, and research equipment without which the road to further aviation progress could not be charted or the highways of the air be built. The Navy was first to fly heavier-than-air machines across the Atlantic and first to attempt to bridge the distance between this country and Hawaii. The Army was first to circumnavigate the globe by plane, first to fly from coast to coast within the span of a single day, and first to link by air the nations of the western hemisphere.

The underlying purposes of the various flight projects undertaken by our military services from time to time since the Navy flight across the Atlantic in 1919 have been identical in two major respects: *First,* to test out endurance of motors, airworthiness of planes, and accuracy of navigation equipment. *Second,* to demonstrate to the people of this country that airplanes are as reliable as are other means of transportation and that the development of airports and public support of commercial airlines will bring within reach of every one the time and trouble saving benefits that the airplane offers to civilization.

The almost uniform success of the various military flying missions reached a startling climax last year when a series of long-distance flights made by American civilian and military airmen held the world in breathless attention. Even as 1903 marks the year in which man conquered the air, so 1927 will always have historic value because it is the milestone on the road of aviation progress that signifies an important turning point—the turn in the road that leads to flying Pullmans and freight cars on wings. But before that last turn was made much history was written in the sky by American airmen whose aërial explorations over land and sea, in the frozen north and under blazing tropical sun, are not only important chapters in the history of flight but add a colorful appendix to the chronicle of men who sought the path of adventure and counted not the cost.

The first of these explorers of the air set their course across the Atlantic Ocean from Newfoundland on May 16, 1919, when three Navy flying boats—the *NC-1, 3,* and *4* took off for Portugal and England by way of the Azores. Only one of the planes completed its journey—the *NC-4,* commanded by Lieutenant-Commander A. C. Read. The other two craft met with the troubles and misfortunes that altogether too often lie in wait for those who fly across the sea.

The *NC-3* was the flagship of the expedition. The men aboard it, commanded by Commander John H. Towers, were the first to feel the predicament of airmen lost at sea in a raging storm with only the thin hull of a flying boat between themselves and Davy Jones's locker. All went well with the *NC-3* as it took off from Trepassey, which since has become an important hopping-off place in transatlantic flying. The craft made good time and had smooth sailing until it neared the Azores, when dirty weather set in. For five hours Commander Towers and his men fought their way through rain and fog. Finally, within less than fifty miles of land, they thought they would find refuge on the surface of the sea—a move that almost proved their undoing. The waves ran high, and the force of their blows soon wrecked the plane so completely that it could not be flown. The hull was damaged and the wings were torn.

Night came. Hour after hour the craft was tossed like a shell on the sea with only the froth on the towering wave crests glinting through the darkness. Any minute might be the last for these men who had the courage to be among the first to fly across the Atlantic. Throughout the

FIRST TO DO THE OUTSIDE LOOP

Lieutenant J. H. Doolittle won the 1925 Schneider Cup Race and at another time flew hundreds of miles in South America although crippled by broken ankles.

night came the consoling signals from ships engaged in a frantic search for them —a search that was as futile as the *NC-3's* attempts to send a message from its own wireless, which could receive but not send. When the sun rose the *NC-3* was still afloat and battling for life.

For fifty-two hours, without food and with only the water they could drain out of the radiators to drink, Commander Towers and his men fought and finally conquered the elements. It was a grim battle, with all the odds against them. So much greater, therefore, their victory when the *NC-3*, a crippled thing, came crawling into the Harbor of Ponta Delgada. Its crew was intact, but the plane was so damaged that it could not continue the flight.

Meanwhile, the *NC-1* had been put out of the running when it sank at sea after its crew, commanded by Lieutenant-Commander P. N. L. Bellinger, had vainly tried to save it. The *NC-1*, like its sister ship, had been forced down by bad weather and damaged so severely by the pounding seas that it could not take off again. For five hours the plane, with motors running wide open, headed toward land in a futile but noble effort to bring it safely ashore. The *NC-1* was finally sighted by the steamship *Ionia*, which took Bellinger and his men aboard. An attempt to tow the *NC-1* to port proved of no avail. The towing line broke, and the plane, drifting helpless on the sea, was soon pounded to pieces and sank.

Although they were not Americans but English, the flight by Captain John Alcock and Lieutenant Arthur Brown in June, 1919, across the Atlantic has a place in these pages—not because it was the first successful non-stop flight across the Atlantic following Hawker and Grieve's near-successful try but because its start from this continent makes it part of the aërial history of America. Alcock and Brown flew from St. Johns, Newfoundland, to Clifden, Ireland, a distance of 1,936 miles, in 15 hours and 57 minutes. They might have gone on to London had not their ship been so seriously damaged in landing that it was beyond repair.

The two transatlantic non-stop flyers were in trouble almost from the very start. They flew in fog virtually all the way across the Atlantic, and the plane looped, rolled, and spun. It was a brave flight and well performed.

Four years have passed since the Army's round-the-world flight was brought to a successful conclusion in 1924. Many inspiring chapters have been written in aviation since, but I doubt if one will ever be penned that equals the first and, so far, the only flight around the globe. Undertaken with equipment that to-day would be decidedly old-fashioned, this venture, in my opinion, stands out as the greatest flight in history, and its members must be regarded as among the finest and most formidable explorers of the air.

In considering the round-the-world flight, credit must be given Major-General Mason M. Patrick, now retired, who, as Chief of Air Corps, supported and encouraged flight projects that have enhanced the prestige of American aviation and demonstrated how easily the airplane may be made a vehicle for commerce, at a time when practical moral support was needed by those who strove to awaken the air-consciousness of America. At a time of life when most other men feel they have earned rest in retirement, General Patrick undertook the greatest task of his career—the building up of the Army's air defenses. His genius for organization produced results in the form of increased morale and heightened efficiency in the air branch of the Army, and to show his men that he was with them heart and soul, General Patrick learned to fly at the age of sixty.

He believed in the airplane as a powerful force in battle but recognized it also as a mighty factor in commerce. His aim was to increase the tactical value of planes in war and to demonstrate their practical value in peace. In line with this policy, which had a tremendous effect in restoring public confidence in aviation, General Patrick encouraged projects that in reality were practical talks on aviation, and the world was his lecture room. Among flights encouraged by General Patrick were various altitude and endur-

ance tests, the first coast to coast non-stop flight, Maughan's dawn-to-dusk race against the setting sun, the Pan-American "good will" mission, the Hawaiian and the round-the-world flights. Of these missions, the round-the-world flight, in my opinion, towers head and shoulders above all others.

The round-the-world expedition left Seattle on April 6, 1924, and returned to the field from which it took off on September 28, 1924. During the interim it had flown a zigzag course of 27,553 miles over arctic snows, oceans, deserts, and jungles, in a total flying time of 371 hours and 11 minutes. Four planes started, but only two of them made the complete trip. The *Seattle*, flagship of Major Frederick M. Martin, crashed on a mountainside on one of the earliest legs of the flight, while the *Boston*, piloted by Lieutenant Leigh Wade, sank while being towed, after a forced landing in the North Atlantic. The two remaining ships—the *New Orleans* and the *Chicago*—returned to the starting point.

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LIEUTENANT-COMMANDER A. C. READ

His plane, the *NC-4*, alone completed the transatlantic flight begun from Newfoundland, May 16, 1919.

On April 15th, while flying in the frozen fastnesses of Alaska, delays occurred that finally led to the elimination of Major Martin and the *Seattle*. Between Seward and Chignik, Alaska, Major Martin's engine went out of commission; but he was able to land in a sheltered cove, where he was found the next day by a destroyer sent out to seek him. Examination disclosed that a new motor was needed. After a wait of ten days it arrived and was installed. There were further delays, due to bad weather, until April 25th, when Major Martin, with Sergeant Harvey, his mechanic, took off for Chignik. More bad weather. More delays. Finally, on April 30th, Major Martin received word that the weather permitted a hop to Dutch Harbor in the Aleutian Islands, where the three other planes were waiting for him.

But Major Martin never reached Dutch Harbor. Snow, followed by fog, lured him off his course. Major Martin, peering through the mist that surrounded the plane and fighting to keep the ship on an even keel, suddenly saw a mountain come rushing toward him in the fog. He could not climb. There was no time to turn. It was only a matter of seconds, and each second counted a lifetime. Cutting his switch and nosing his ship up, Major Martin took the only course there was to take—pancaked his plane on the mountainside, thus saving Sergeant Harvey's life and his own.

Failing to reach Dutch Harbor, the *Seattle* was once more reported missing. Search

was made on land and sea, but no signs were found that pointed to the fate of its crew. Major Martin and Harvey were believed dead when, after ten days of struggling through the wilderness, they reached Moller Bay. For two days they had been held captive under their wrecked plane by fog so thick that neither dared leave the shelter the wreck afforded them. On the third day they began their hunt for a trail that led back to civilization. For more than a week they were lost in the wilderness, and the only protection they found was a deserted cabin. Their lives endangered by heavy snows, for two days they remained in shelter there.

Meanwhile the *Chicago*, the *New Orleans*, and the *Boston* were ordered to proceed from Dutch Harbor to Japan. Lieutenant Lowell H. Smith was named flight commander and proved himself an exceptionally able leader. Lieutenant Erik H. Nelson demonstrated his skill as engineering officer. Rain or shine, foul flying or fair, the six flyers stood together as friends and flying mates. Those who have been on extended flights know that there is little rest for pilots who fly on fixed schedules and who, as they go along, must not only be efficient in the air but care for their planes after they land, try to keep awake at public receptions given in their honor, and, up at the crack of dawn next day, be ready to start all over again. It is one of the hardest grinds in the world and tests the temperament and grit of flying men almost to the breaking point. Under such circumstances a man with the strong character and power of leadership of Smith is worth his weight in gold.

One of the most amusing episodes of the flight was when Arnold was made official speech writer. At the outset the members of the cruise decided that they would make no speeches at formal dinners. Arnold thought this policy of silence might leave a queer impression; so one night, at a dinner in Japan, he stood up, made a few nice remarks, sat down, and won quite a harvest of applause.

At the next stop Arnold is ready to repeat his little speech when, lo and behold, Smith is introduced and delivers it for him. Not daunted, Arnold thinks fast and well. When his turn to be introduced comes around Arnold is ready with a few appropriate remarks. More applause. A new hop, a new stop, a new reception—Smith delivers Arnold's old speech, and Arnold is ready to repeat the one that replaced it when Nelson gets up and, with his marked and delightful Swedish accent, delivers Arnold's second address.

This was too much for Arnold. He remonstrated and cajoled but got nowhere. He pointed out that he could not copyright his remarks in all languages, including the Scandinavian, hence he wanted a showdown. His companions admitted there was some justification for his attitude and agreed that if he wanted to he could write a speech that none of them would touch, provided—and here was the Ethiopian among the fagots—provided he would write a speech for each of them. Arnold, after thinking things over, agreed that he would. From that time on there were no infringements.

From the Far East westward toward Europe and through the countries of the Old World flew the three planes, almost on schedule and without any mishaps. Fortune favored them until they were at Kirkwall, in the Orkney Islands, ready to proceed to Iceland. Bad weather delayed the take-off, but early in August the weather looked auspicious, and the three ships flew northward. They had been out only a few minutes when a heavy fog enveloped them. The planes were separated. The *Chicago* and the *Boston* returned to Kirkwall, but no word was received from Nelson and Harding in the *New Orleans* until several hours later, when a telegraphic message announced that they had landed in Iceland.

That single flight of the *New Orleans* was spectacular and came near being its last. Nelson and Harding flew in fog as thick as pea soup. They could not see, did not know whether they were flying up or down, forward or in circles. Once they went into a tail spin that did not end until they were immediately above the water with just room enough between them and

the sea to straighten out. Iceland looked like Omar's dream of Paradise to the two flyers when they landed.

A few days later the *Chicago* and the *Boston* took off for Iceland. Midway between the Orkneys and the Faroe Islands the *Boston* developed engine trouble and was forced to descend in a heavy sea. After making sure no harm was done to the *Boston* or its crew, Smith, with gun full open, pushed the *Chicago* for all it could give until he reached Sydero Island, where there is a wireless station. He dropped a note giving the *Boston's* position, with the request that the message be broadcast to the United States warships that patrolled the route. Smith dropped a second message to the United States destroyer *Billingsby* and, after making sure this message was received, continued to Iceland. Meanwhile, the *Boston* had been taken in tow by a passing trawler, which was located by the cruiser *Richmond*. Wade and Ogden were taken aboard. Unsuccessful efforts to hoist the plane aboard the *Richmond* ended in wrecking the craft to such an extent that it eventually sank.

Reduced now to only two ships and four men, the round-the-world flight was at Reykjavik, ready to start on the most dangerous lap of all—the trip from Iceland to Greenland. The original schedule called for a 500-mile hop from Iceland to Ivigut, but owing to heavy ice at this point, Frederiksdal was selected in its place—a distance of more than eight hundred miles from Reykjavik. In Iceland the American flyers met Locatelli, the Italian airman who was attempting a flight to America. He asked if he might follow the two round-the-world ships and was given ready permission. Locatelli never reached his objective. Halfway out he was forced down by fog and was located three nights later by the *Richmond*.

The *Chicago* and the *New Orleans* took off for Frederiksdal on August 21st. The ships roared over arctic regions where planes had never flown before —100—200—400—500 miles. The sky was clear, the air quiet; the sun shone brightly. All was lovely when once more fog—the arch enemy of aviation—took the ships in his clammy grasp. More than three hundred miles to go. And among the dangers that lurked in the fog was the ever-present peril of icebergs. In order to keep on even keel the planes would now and then fly close to the surface of the sea. Several times they pulled up sharp just in time to escape crashing into a mountain of ice. At last, to escape this menace they climbed high above the fog.

Smith, who was flying about half an hour ahead of Nelson, at last believed that he was above his destination and that somewhere beneath the fog lay Frederiksdal. He was in a serious predicament. If he kept going he would go beyond his objective. If he went down through the fog he ran the risk of crashing on either sea or land. He had no way of knowing how close the fog hung to the ground or the surface of the sea.

At this very moment, when Smith was wondering what to do next, the fog beneath him rolled away, leaving a large hole, and through it Smith saw a ship sending out smoke signals. Near by was Frederiksdal. Smith slipped through the heaven-sent opening in the fog and landed. Half an hour later the roar of Nelson's plane was heard high in the air. Once more the fog rolled away, and Nelson got down. To this hour no one has found any explanation of how the fog parted twice within an hour—each time to let an airplane through. From Frederiksdal it was smooth sailing to Labrador and Nova Scotia, where Wade and Ogden met them in a new *Boston*. From the shores of the Atlantic across the country to the West Coast, the rest of the flight was a triumphal procession that came to a rousing climax in Seattle.

Of outstanding importance among the great airplane races in history is the flight against time by Lieutenant Russell L. Maughan, who flew from coast to coast between sun-up on Long Island and sunset at San Francisco. Close beside this feat stands that of Lieutenants Oakley Kelly and John A. Macready, who won distinction on their non-stop flight from coast to coast. Five years have passed since the first non-stop flight, and four years

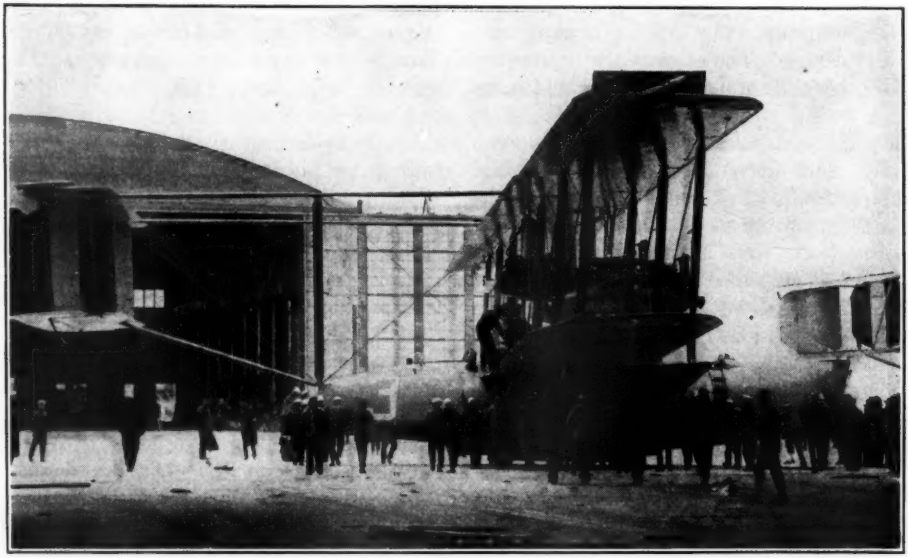
have gone by since Maughan's dawn-to-dusk exploit. Airplanes are now faster, more reliable, but the records made by these men stood until the two recent non-stop sea-to-sea flights of the *Yankee Doodle.*

Maughan was—and still is—one of the best all-around pilots in the Army. He won the Pulitzer race in 1922, when he set a new world speed record. He flies beautifully and with rare judgment. Maughan's most outstanding characteristic is a streak of stubborn persistence that never says die. He started on his first dawn-to-dusk flight in 1923 and got as far as St. Joseph, Missouri, where the end of a highly imperfect day was assured by a cow that strolled in the path of his plane as he landed.

This was just too bad for the plane, for the cow, and for Maughan—particularly for the last, because he had to start all over again. On his next try, Maughan got as far as Rock Springs, Wyoming, and once more came a cropper, due to engine trouble.

On June 23, 1924, Maughan left Mitchell Field at 2:58 A. M., to make a successful attempt to beat the ancient combination of Old Sol and Father Time. His plane was an ordinary Army pursuit ship, the machine-gun and ammunition load being supplanted by extra gasoline tanks. From New York to Pittsburgh all went fine. Between Pittsburgh and Dayton—100 miles of fog. Between Dayton and St. Joseph—smooth sailing, which was needed to overcome the loss of one hour at Dayton, due to a mechanic's blunder. At St. Joseph more time lost, owing to a soft field that prevented Maughan from taking off with a full load of gas.

From St. Joseph to North Platte, the sturdy pilot began to have his hands full, owing to increasingly strong head winds. The farther west he flew, the stronger the wind; and the higher he flew, the stronger it blew. Maughan found that the wind offered least resistance close to the ground, so for mile after mile, until he had to climb to get over the Rockies, Maughan flew only 10 feet above the ground, climbing trees and hills and houses as he advanced. Dirty weather awaited him in the Rockies, where he was met by a reception committee of fog that clung to the mountain tops and clouds that hung directly above them. Between the fog and the clouds there



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DIRTY WEATHER ENDED HER FLIGHT

The *NC-3*, flagship of the transatlantic flight, was brought down and badly crippled within fifty miles of Ponta Delgada.

was a lane of open air just big enough for Maughan to get through.

Ahead of him the sun was sliding beneath the horizon, although Maughan could not see it through the fog. He thundered over Sacramento, rushed toward San Francisco, and soared over the landing field just one minute before the official period of dusk came to an end. He swooped over the field for eight minutes, waiting for the fog to lift, and finally landed, having covered 2,670 miles in a total time of 21 hours and 48 minutes.

Throughout the country and among flyers abroad, Maughan is celebrated as the Dawn-to-Dusk flyer, but among his cronies in the service he is also known as the Dusk-to-Dawn flyer—and thereby hangs a tale that has its setting at Kelly Field, Texas, in the fall of 1923. Maughan was leaving for St. Louis to attend the Pulitzer races, which he had won the year before. It was pitch dark when he took off and headed, so he believed, toward his goal. It happened that he lost his way and returned to Kelly Field just about dawn—hence the Dusk-to-Dawn flyer.

Kelly and Macready made their non-stop flight from New York to San Diego on May 2 and 3, 1923. On their first attempt in 1922, they started from San Diego but were forced back by bad weather. However, they remained in the air over San Diego long enough to establish a new endurance record. They were aloft for 35 hours and 18 minutes, but their record could be given no official recognition because official timers were not present. In November, 1922, they made their second attempt, also from San Diego, and came within 700 miles of their objective, when a leaking radiator forced them down at Indianapolis. Kelly attempted to keep the plane in the air by climbing out on its nose while in full flight and pouring all the liquids they had aboard—coffee, milk, and water—into the radiator, but his efforts went for naught. Down they came.

Finally, in 1923, after starting from New York on May 2nd, the 2,500-mile flight was accomplished in 26 hours and 50 minutes. It is not far-fetched to say that the endurance demonstrated in the Macready–Kelly non-stop flight promoted the belief that the day was near when airplanes would be able to make transoceanic flights on a greater scale than had been accomplished up to that time.

BEAT SUN BY ONE MINUTE

On the dawn-to-dusk, coast-to-coast flight, Lieutenant Russell L. Maughan soared over the San Francisco landing field one minute before the official period of dusk came to an end.

Kelly has all the wit, all the sympathy, and all the pluck of the Irish. He is a confirmed practical joker and thinks more of a practical joke successfully perpetrated than he does of a record. While he was at the Army Air Corps laboratories at Dayton, as member of the test section, Kelly devised an instrument on which he bestowed the title of lung-tester—an ordinary pipe filled with lampblack, and the better the lungs of the person who blew it, the greater the volume of lampblack it poured over his face.

Macready is a man of many professions. He can qualify as a miner, rancher, boxer,

lawyer, and justice of the peace. At one time he was even mayor of a small town in Arizona. He is good-natured, rather silent, and a remarkable non-stop listener. His hobby is athletics. He was once amateur lightweight champion of the Pacific Coast and still keeps himself in splendid physical trim. It is probably due to the extreme care with which Macready treats himself that he has succeeded in establishing his various altitude records. Macready and his ships are always in perfect condition.

Macready, who resigned from the service recently, has been an altitude flyer of rare ability. He has not only the physical stamina to withstand the tax that great heights place upon pilots but also the skill to get the last foot of climb out of his plane. His last great flight was in January, 1926, when he set a new altitude record of 38,704 feet.

Speaking of altitude flyers brings to mind Major Rudolph W. Schroeder, who set an altitude record in 1920 when he climbed to 33,000 feet and there fell unconscious while his plane plunged earthward out of control for 30,000 feet. And Schroeder still lives to talk about it. Major Schroeder is tall—somewhere between six and seven feet—and because of this, it is obvious that he should be known as "Shorty." From 1918 to 1920, he was chief test pilot at Dayton and flew all sorts of ships, as test pilots do. The members of the French Mission stationed at Dayton during the war recognized Schroeder's genius, and when they returned to France after the war they presented him with a Nieuport 28—a small, fast, single-seater pursuit plane, from the cockpit of which the huge form of Schroeder towered like a giant in a baby carriage.

The day before Christmas, 1918, I was in Indianapolis and while in my hotel room I heard a plane's engine. It was snowing. It was almost dark. I looked out of the window, wondering who would be flying on a day like that, when I saw Schroeder's Nieuport flit by almost level with my window. When I returned to Dayton I learned that he had taken off for his home in Chicago with the Nieuport and that his wife sat on his lap in the narrow little cockpit throughout the entire journey. How he handled the controls I don't know.

However, I started out to tell about Schroeder's altitude flight in February, 1920. For the benefit of those whose knowledge of altitude is limited to the fact that 33,000 feet or more is several miles higher than the Woolworth Building let me explain briefly just what happens when a pilot begins the long upward climb that ends only when the air is too light for his ship to go any higher or when his supply of oxygen gives out. For many years it has been the dream of aviators to penetrate into the unknown regions of the upper air in the belief that there they will find easterly and westerly trade winds that blow at terrific pace. Once those trade winds have been found and once aircraft have been constructed that will permit flying in those altitudes, planes will be able to travel over continents and across oceans at terrific speeds.

To the altitude flyer and to those interested in the results he may obtain, mere height means little unless the complete story of the climb is told. For that reason, the pilot must not only keep his mind on the tricky business of flying a ship in rapidly thinning atmosphere but also make repeated entries in his log of the readings on the instruments in front of him. As he climbs it gets colder and colder. His discomforts increase until, when there is not enough oxygen in the air for him to breathe, he switches on the oxygen tanks.

When Schroeder on his altitude flight reached the 33,000-foot level he found he had enough gas left for another 90 minutes of flying. He continued his climb. After struggling 100 feet or so higher, he discovered with horror that his oxygen supply was exhausted. Gasping for air, like one who has been breathing poison gas, Schroeder tore off his mask—the worst thing he could do. The deadly carbon-monoxide gas from the engine poured over him. He inhaled it in hasty gulps. He felt himself go. It grew dark before his eyes. He knew he was fainting. He pushed the stick forward to start the plane in a glide, put his hand

on the switch that cut off the engine, and passed out.

Through the frozen stratas of the upper air where nothing can live, Schroeder's plane plunged toward earth in swoops, circles, and sudden darts. Men on the ground saw its crazy manœuvers and wondered what had happened. It came closer and closer. Presently it would crash, and no one would ever know what had taken place. Then, when only 2,000 feet above the ground, the plane straightened out, came down in a gentle dive, described a circle, nosed into the wind, and landed. Officers and men on the field rushed toward the plane and found Major Schroeder, apparently lifeless, slumping over the side of the cockpit, staring at the ground with frozen, sightless eyes. He was rushed to the hospital, where he soon recovered consciousness, but it was some time before he could see, as he had frozen his eyeballs. Afterward Major Schroeder reported how he, at the end of his five-mile fall, had regained consciousness just long enough to realize his predicament and save himself and his ship from a crash. Major Schroeder set a record that day—but he came uncomfortably near paying a top-notch price for it.

"THE SOUL OF A CONQUEROR"

Lieutenant Cyrus Bettis, after crashing his own plane to save the lives of his flight companions, crawled, with a smashed face and broken leg, for forty-eight hours through brush and over rocks without food or water.

America has produced some wonderful racing pilots and will rear many more as time goes on. Of late it seems as if all the speed honors have gone to Europe, but that is only a temporary condition—an added incentive, in fact, for America to recover the laurels it has captured on two occasions in the Schneider Cup races.

The first Schneider trophy victory was scored in 1923 by Lieutenant David Rittenhouse, of the Navy, and the second in 1925, when Lieutenant James H. Doolittle, of the Army, beat the field in the same plane in which Lieutenant Cyrus Bettis, also an Army flyer, had won the 1925 Pulitzer trophy a few days before.

If any one could be called the finest and most skillful flyer in the world, I would nominate Lieutenant Doolittle for that honor. He flies, in my opinion, with more beauty and more finesse than does any other man who sits behind the stick to-day. There is grace and harmony in every movement. It is as if his personality exercises its influence over the plane and it becomes a live and understanding thing. Doolittle has performed many feats characteristic of his dynamic temperament since he entered Army aviation in 1917, but the best picture of Doolittle the man, as well as of Doolittle the super-pilot, is found in his experiences in Chile a few years ago, when he was demonstrating an American pursuit plane.

A few days before Doolittle was to give an important exhibition he stumbled and fell from a balcony, broke both his ankles, and was taken to a hospital. The day for the demonstration had been set, and important Chilean officials were ready to see what the American ship could do. A pilot representing a European make of aircraft was also in attendance. Having heard of the demonstration arranged by Doolittle and of the distinguished company that would be present, the foreign pilot landed his own craft on the field, intending to take full advantage of the occasion. In other

words, he was out to steal Doolittle's show.

But in this respect the foreign flyer reckoned without his host. Doolittle received word at the hospital of what was about to happen. Over the protests of doctors and nurses, he was carried to an automobile and driven to the field, where he ordered his ship put on the line and made ready. When that was done, Doolittle put on a helmet and a pair of goggles, had himself lifted into the ship, and climbed skyward posthaste to where the other pilot was doing aërobatics. Now occurred a thing that was not on the program but that proved highly thrilling and entertaining. The Chileans saw a first class pursuit pilot flying his plane into a dog fight.

Zooming, swerving, rolling, banking, Doolittle flew rings around the other airman, pressing him closer and closer toward the earth. The fellow landed, jumped out of his plane, and ran off the field to where the spectators stood, where he complained that Doolittle had cut his wing fabric with the tailskid on his plane. Examination showed a scratch but no hole. When Doolittle landed and had been made comfortable in his car, the complaint was called to his attention.

"I never touched him," he remarked with emphasis. "I never came nearer to his ship than three or four inches."

Only two men have done the outside loop, the most difficult of all aërial manœuvers because it hurls every form of defiance at the laws of gravity. In the ordinary loop the pilot sits inside the vertical circle described by the plane, while he is on the outside of it in the outside loop. It is dangerous business and requires a flyer who can get every ounce of power and instantaneous response out of the plane he is using.

Lieutenant Doolittle was first to demonstrate that the outside loop could be completed. There were many who believed that it could not be done. He performed the feat in 1927, while he was test pilot at the Air Corps Materiel Division near Dayton. This flight made the aëronautical world sit up and take notice. Lieutenant Alford J. Williams, a leading racing flyer of the Navy, has the distinction of being the second man to do the outside loop. Aside from their flying ability Williams and Doolittle have nothing in common. The latter is short and dark, while Williams is tall and fair—a handsome fellow with clear-cut features. The Navy flyer performed the outside loop in the spring of 1928 and won wide acclaim for his feat.

But stunting is not Al Williams's leading specialty. Speed is. From time to time since he took up flying in 1917, Williams has hung up a number of world speed records. Last year he set his heart on winning the 1927 Schneider cup races in a plane the construction and power-plant of which he supervised so closely that for almost a year Williams gave it all his spare time. In fact, he actually commuted by air between New York, where the plane was built, and Washington, where he is stationed. Luck was against Williams. It was not possible to get the ship ready in time for the races, which were held in Italy. The government stood ready to rush the craft to Europe aboard a warship, if need be, but hopes of America's winning the Schneider Cup had to be given up. Tests on Williams's plane showed that it did not have the speed it would need to win.

Lieutenant Williams is a native of New York, where he was born in 1894. At the age of twenty he won his A. B. degree at Fordham. In the summer of 1914 he was a member of the pitching staff of the New York "Giants" and remained on the team until the close of the 1915 season. Just before the war he was baseball coach at the Horace Mann High School.

Prominent among the speed kings of a few years ago was Lieutenant Cyrus Bettis, of the Army Air Corps, one of the Pulitzer race winners, a wholly different type from either Doolittle or Williams. "Cy" Bettis is dead, and there is little doubt that he ran the risk of death to save the lives of two companions. He crashed in August, 1926, while leading a three-plane pursuit formation from Philadelphia to Selfridge Field. As leader of the flight, Bettis flew ahead of and between the two other ships. When they approached the

Alleghenies clouds and fog began to gather. The weather grew thicker. Presently it was impossible to see.

Three planes entered the fog. Only two came out of it. Two days later Bettis was found on a lone mountain road. With smashed face and broken leg he had crawled for forty-eight hours through brush and over rocks without food or water. He was taken to Bellefonte, Pennsylvania, where he was picked up by an ambulance plane and flown to Washington. Bettis died shortly afterward. He never told his story, but it is believed that Bettis flew straight ahead when he saw the mountain loom up before him rather than risk the chance of crashing into one of the planes flying on either side behind him. That is exactly what Cy Bettis would have done.

There are other great racing pilots besides those of the military services, including men whose names are household words wherever airplanes are discussed in America. Where is the man, woman, or child who has not heard of "Casey" Jones, Bert Acosta, and the late but never-to-be-forgotten Lloyd Bertaud? From the early post-war days this trio participated in numerous racing events and usually with distinction.

Bert Acosta, racer, test pilot, and transatlantic flyer, and Lloyd Bertaud, racer, mail pilot, and luckless airman on *Old Glory*, which set out for Rome but was lost, were keen rivals and great friends. Wherever they flew many stories of their antics swirled in the slipstream behind them, but the most amusing of the lot is told of one time they were together at Curtiss Field, near New York City. It was rather late at night, but just how late neither Bertaud nor Acosta knew. Acosta's watch was not running, and Bertaud did not have one with him. The two flyers thought of various ways by which mortals might learn the time of night and finally decided that the most direct and satisfactory course would be to get into their planes, fly to New York, and see what the clock atop the City Hall had to say about it. No sooner suggested than it was done.

International recognition was won by Bertaud in December, 1921, when he and Eddie Stinson established a new world endurance record by remaining aloft for 26 hours and 19 minutes over Long Island in zero weather, with a terrible snowstorm to keep them company. It is doubtful if any endurance flight has ever succeeded under greater handicaps.

The field was heavy with snow when their ship started into the wind on the take-off. It seemed as if the plane would never leave the ground; as if, after it left the ground, it would never gain altitude. The heavy load of fuel made it difficult for the ship to climb, but finally they got up and away. Throughout the day and night the snow continued to fall, and with it came a 40-mile-an-hour gale that raised havoc with the gas consumption of the Stinson-Bertaud plane when it fought its way against powerful head winds. The wind and weather turned the flight into more than a test of motor endurance. It was a gauge of the skill and courage of the pilots as well. Finally, on the second day, a defective oil system compelled Stinson and Bertaud to land, although they had enough gas in the tank to remain in the air for five more hours. Both were frozen and fatigued—particularly Stinson, whose clothing consisted of only a fur-lined coat over an ordinary business suit. Stinson, it will be remembered, established a temporary endurance record in Florida last winter when he, with Captain George Haldeman, of *American Girl* fame, stayed in the air for 53 hours and 36½ minutes.

Acosta, as a pilot, is in a class by himself. He understands ships, particularly heavy ships, better than any man I know. He is a marvelous test pilot and has an uncanny gift for discovering, within a few seconds, the strong and weak points in a plane. Acosta is a much greater test pilot than a cross-country flyer. He often gets lost but is usually able to land, find out where he is, and continue on his way. Some years ago he was piloting J. M. Larsen from the Pacific Coast to New York. Larsen, who knew Acosta's method of flying, passed several notes to the pilot asking him where they were and received no reply.

Finally their ship passed over a city, and

Larsen wrote a note inquiring what city it was.

Acosta turned the note over and on its back wrote:

"It may be Wheeling, but I think it is Cleveland."

It was all the same to Acosta so long as he got to New York—which, by the way, he did.

Casey Jones's name and position is more formally expressed as Charles Sherman Jones, vice-president of the Curtiss Company. If any airman belongs in that tome of distinction Casey does, for almost every celebrity in the worlds of finance, society, sports, or art who has ever been in a plane has looked at the back of Casey's neck from the rear cockpit of Casey's plane. He began his flying days in the Army, during the war, and was one of the lucky fellows who got to France. When hostilities ceased Jones, instead of returning to his old job as physical director at Montclair Academy, went in for airplane racing, and his record shows that he could usually be depended on to capture either first or second prize.

Casey Jones has a room filled with trophies and souvenirs of various kinds, but whenever he goes to a race—and he attends all of them, even though he may not be an entry—Casey brings his most cherished possession with him—a vest that once upon a time was white, but that was so long ago that it is almost a fairy tale. On the vest in various inks, curlycues, and strokes are the signatures of Casey's list of "Interesting Persons I Have Met." The garment is Casey's autograph album; and, like Art Smith and his famous vest, Jones dons it only on state occasions. When he has it on—well, anything may happen.

One of the interesting contributions made by Casey Jones—not by Charles Sherman Jones—to aviation is a game called airplane golf. How is it played? In this manner: There is a pilot and a plane for every player on the ground and the pilot has a ball for every hole to be played. Each pilot drops his ball as close to the green as he is able to—on it if possible—and then it is up to his partner on the ground to hole in in the lowest number of strokes.

The subject of racing pilots and endurance flights brings to mind one of the oddest non-stop endurance flights in history. It was staged by Lieutenant Lowell Smith and Lieutenant J. P. Richter in 1925, when they flew 1,200 miles on the West Coast from the Canadian to the Mexican border without stopping, in ordinary D-H planes. The trip took 12 hours and was made possible by refueling in the air, a difficult performance that required extreme skill and caution on the part of pilots of both planes.

In December, 1923, an airplane flying from London to Belgium was forced down at sea. What happened from then on is not known, but it is believed that its pilot—a stalwart young athlete—attempted to swim to shore through the icy waters of the Channel. At any rate, this flight marked the passing of Lawrence Sperry, whose inventive genius produced many valuable contributions to American aviation.

Although he was only in his thirtieth year at the time of his death, Sperry had won international fame, not alone as an aëronautical engineer but also as a pioneer in realms of flight that even to this day have not been mastered. It was Sperry who conceived the idea of an aërial torpedo—a plane loaded with high explosives and propelled through the air under its own power, but directed by a gyroscope toward its destination, where it would crash to earth and explode. Sperry developed the idea during the war and conducted several experiments that indicated that a new and deadly engine of destruction was in process of evolution.

The first test of the aërial torpedo was made on Long Island, in the presence of several military aëronautical experts. An ordinary plane, with its landing gear removed, was used in this experiment. The control mechanism was set so that the plane should fly straight ahead for about a mile, when it would dive and crash. The take-off was made from a catapult. With engine roaring, the plane rushed into the air, gained altitude, straightened itself

out, and flew as if controlled by a pilot. However, the crashing mechanism did not work on that first test. The plane flew toward the skyline, out over the sea, and kept going until completely out of sight. For all the world knows it may have kept running until it was out of gas; at any rate, no trace of it was ever found.

Sperry began his aëronautical experiments in 1909, when he, at the age of sixteen, built a plane that he flew the following year in towed flight. This kind of flying did not satisfy him, so in 1911 he installed a motor, with the result that young Sperry became a real airman. At the age of nineteen he was manager of the airplane department and chief research director of his father's concern, the Sperry Gyroscope Company, and at the age of twenty-one he won first prize in an aviation safety contest conducted in France.

A veritable fountain of ideas that always were designed to advance aviation was Sperry. He tinkered with innovations of various kinds—not one or two, but a whole flock of them. In the midst of a conversation he would get an idea, pull out pad and pencil, and make notes. He helped design the Sperry Messenger, the smallest airplane ever built, and flew it extensively. Sperry actually took air travel as a matter of course. He always went by plane, really commuted by air. Night or day, rain or shine, it made no difference to him. If he were going to a place where a plane could take him, he went by plane. Sperry had many forced landings at night, but without disastrous results. He seemed to have eyes that penetrated darkness like those of a cat, and like a cat he always landed on all fours.

Sperry had no fear of forced landings or even of crashes. He took them as an unavoidable part of the game, and because he classed them as normal hazards he was a firm advocate of crash-preparedness. Illustrative of his attitude in this respect was his suggestion that the military services should give regular crash-courses to pilots. These, he believed, should consist of actual crashes with ships no longer fitted for service. He offered to supervise the course of instruction and to demonstrate how pilots might crash and still escape injury. The crash-course, as Sperry outlined it, would have three stages. The student would first crash into swamps, primarily to overcome his fear of crashing and also to learn what happens to a plane when it makes an involuntary landing. The next stage would comprise crash-lessons in trees, while the third would be on hard surfaces like stones or cement.

The death of Sperry was a great loss to American aviation. It may be regarded as a foregone conclusion that he would have done much to further the safety and success of air travel. He might have lived had he stood by the plane instead of attempting to swim ashore, as it is surmised he did. The plane was found floating in the water, but Sperry had gone on.

The World War ended some ten years ago, but so far as the Marine Corps is concerned a war of some kind or other is always going on. With the advent of the airplane the old maxim to the effect that "the Marines have landed and have the situation well in hand" has taken on a new and important meaning.

Down in Nicaragua, where General Sandino has been conducting a campaign for President on a platform that consists mainly of rifles and machine guns, the Marines have had their hands full for some little time running another ticket that calls for law and order. Among those who have covered the campaign with great distinction and much glory is a group of the Marine Corps pilots. Day after day, for months on end, these flying Marines have done their stuff over mountains and jungles in all sorts of weather, in a manner that is as admirable as it is amazing.

Among Marine pilots on service in Nicaragua was Lieutenant Frank Schilt, a fine pilot with racing blood in his veins, as he demonstrated in 1926, when he came within a hair's breadth of winning the Schneider Cup for America. He came in second. However, in another race staged in January, 1928, over a 25-mile course, in a desolate section of Nicaragua, Schilt came in first, not once but ten times. The race lasted three days, and the stakes were human lives. The award that fell to Schilt

was the greatest distinction this country can bestow upon men who perform deeds of valor over and above the call of duty—the Congressional Medal of Honor.

Picture a tiny Nicaraguan town with two ragged lines of squat, adobe houses grouped along a narrow street through the center of which runs a three-foot ditch, and you have a fair idea of the town of Quilali, where in January a handful of Marines were besieged by members of Sandino's band. Steady activity by outlaw sharpshooters had taken heavy toll among the members of the small garrison. Two officers and sixteen men had been wounded—nine of them seriously. All of them faced certain death unless they received immediate and proper care. Food was scant and ammunition almost exhausted.

Word of the predicament of these men was received at Ocotal, twenty-five miles away, where the Marines had their base. It would be impossible to send relief to Quilali by foot or mule in time to save the men from their doom. There was only one way out—the airplane. A survey was made. It disclosed that it would be impossible to land a plane outside the town, as there was no field level enough for landing even if Sandino's soldiers did not subject the plane to heavy fire, as they could most certainly be relied upon to do. Eventually it was decided that the main and only street of Quilali offered the sole landing field in the neighborhood. But it was only 15 feet wide, and in its center ran a ditch that would be sure to wreck a plane as quickly as would a shell. The street had to be used; and as a first move to make landings possible picks and shovels were dropped from planes flying low over Quilali. The besieged Marines tore down buildings, filled in the ditch and thus built a runway that was 70 feet wide and 300 feet long.

As soon as this rough and dangerous landing field had been completed, Schilt began the hazardous job of evacuation. On January 6th, 7th, and 8th, he made ten round trips between Ocotal and Quilali. He was under almost constant fire from Sandino troops. The seriously wounded were taken one by one in the rear cockpit of his observation plane, while those who were less dangerously injured were taken out in pairs. As Schilt performed his mission, another pilot hung above him ready to pour streams of machine-gun lead into any Sandino troops that might launch an attack.

The job Schilt performed so well called not only for superior courage but also for exceptional flying ability. The weather throughout the three days was extremely bad. Low clouds, heavy rains, and dense fog made flying extraordinarily hazardous, and the country over which he flew was wickedly treacherous under even ordinary flying conditions. Despite these handicaps, Schilt got through—not once or twice, but ten times: ten landings on a rough and stony strip of ground; ten take-offs that were made possible only by Marines holding on to the wings of the ship until it was in flying position and the motor had gained its maximum power, thus shortening the distance necessary for the take-off. Three hundred feet may be a good distance for a niblick shot out of a bunker but is no distance at all for a plane to take off in.

Pilots such as Lieutenant Schilt add new glory to the already brilliant records of flying Marines, who have dared and died under the emblem of the Globe and the Anchor. However, to Schilt his five hundred miles of dangerous flying was only part of the day's work. But the fact remains that on his tunic rests the light blue ribbon with thirteen silver stars presented to him by the American people for exceptional valor and gallantry in action.

Much has been said, written, and thought about William Mitchell—the storm center of one of the bitterest controversies that has ever raged about American aviation. To some he is a martyr; to others a menace. His friends believe he sacrificed himself for the cause of aviation. His enemies contend he was caught in a web of his own making. But whatever the pros or cons in the case may be, the Mitchell controversy is and always will be an integral part of American aviation history, and General Mitchell will forever

stand out as a picturesque, stormy, and interesting figure in its pages.

The storm clouds of the Mitchell controversy appeared on the horizon soon after 1921, when the fiery General made charges that there was a deliberate move on foot to hamstring the air defenses of the country, despite bombing demonstrations that resulted in the sinking of two warships and that, General Mitchell asserted, "proved to the world that air power had revolutionized all schemes of national defense." From time to time he issued charges that the true facts with respect to the serviceability of Army planes were being suppressed and that the planes in use were dangerous to fly and useless in military operations.

The climax of the flow of criticisms from General Mitchell's fluent tongue and fertile pen came in September, 1925, when the nation was shocked by the *Shenandoah* disaster and worried over the fate of Commander Rodgers and the crew of the *PN-9*, the Navy plane that attempted the first flight to Hawaii. At that time, General Mitchell issued a statement in which he subjected the War and Navy Departments to vitriolic attack. On the very heels of this statement followed action that led to trial by a court-martial.

General Mitchell had a distinguished and dramatic military career. He always managed to be in the thick of things when any excitement was on. Starting with the Spanish–American War, in which he was the youngest Army officer, he took part in the quelling of the Philippine insurrection; was in the Army of Cuban occupation; went with General Pershing into Mexico; and threw in his lot with the air service in 1916. General Mitchell took to flying as a duck takes to water. In the World War he was the first American Army officer under fire and the first flying officer to cross the lines. He was a brave and fearless fighter, who, despite the fact that he held the rank of Brigadier-General and had charge of all air activities in the zone of advance, flew wherever his men flew, and the greater the danger, the greater his joy.

When the war ended General Mitchell returned to this country. In 1921, he was appointed Assistant Chief of Air Service for a period of four years. During those four years General Mitchell moved with the speed of an express train and worked incessantly. I recall how he, after the 1922 Pulitzer races, stepped into a racing plane for the first time in his life—and racing planes are tricky things to fly. He gave it the gun and when he landed a little while afterward General Mitchell had established a new world speed record of more than 244 miles an hour. He had done a remarkable job in flying that plane, but Mitchell took it as a matter of course.

In 1925, when his term as Assistant Chief of Air Service expired, General Mitchell reverted to his original rank of Colonel and was made Air Officer of the 8th Corps Area with headquarters in San Antonio, Texas. This was his last post. From there he launched the attacks that led to his trial and eventually to his resignation from the service.

As I observed at the outset: To some General Mitchell is a martyr; to others he is a menace—but to friend and critic alike he is a man.

The purpose of these sketches is not to give a complete delineation of air progress in the United States but to present a series of pictures of some of those who in various ways have contributed the color and inspiration with which the heavier-than-air chapter in the history of American aëronautics is so richly endowed.

In Le Mans, not far from where Wilbur Wright made his first flight in France, stands a slender shaft in memory of the Wrights. On it is inscribed a verse by Victor Hugo that epitomizes the dauntless courage and the deathless spirit of those who devote their days and give their lives to promote the cause of aviation:

> You know that our soul is strong
> And fears naught
> When God's breath lifts it high;
> You know that I shall climb
> To the stars above,
> Undaunted in will, to the sky.

And that may well be the credo of the Knights of the Air.

Peace in Commerce, Good Will Among Business Men

An Article on the Progress of Commercial Arbitration

GREGORY MASON

FOR TWENTY-FIVE DOLLARS and a two-cent stamp any business man who finds himself in a dispute with another may get a just, quick, and legal settlement of the matter without going to law, providing the second party to the controversy is as interested as he is in securing a solution that is fair, prompt, and valid. The two-cent stamp will be used to write to the American Arbitration Association, which will put the applicants for a just decision in touch with the nearest tribunal of commercial arbitration. By spending a few more cents for a telegram or a telephone call the business man may have his dispute started toward solution on an hour's notice.

This machinery is available to any one. It is adequate. Its flexibility is amazing. An office may serve as a court room. Arbitrators are drawn from a National Panel of Arbitrators, consisting of more than 4,500 business and professional men in 1,400 communities of the United States. Contestants may also select their own arbitrators, when it is expedient; and all these men are qualified to give intelligent decisions in their particular fields and are bound by oath as well as character to give unbiased judgments. On the arrival of the judges the rules are produced by the secretary. The disputants bring their witnesses and evidence, and almost magically a court of justice appears.

Then, too, many industries have already set up their own arbitration tribunals, and chambers of commerce all over our country are placing the services of arbitrators at the disposal of commercial contestants. In short, American business is taxing itself to relieve the overcrowded condition of the law courts that the ordinary taxpayer supports. This means that American business has discovered that friction reduces profits, and that it is good business to maintain good will. More and more of our merchants and manufacturers are in a mood to sympathize with the sentiment that moved Voltaire when he said, "I have been ruined twice in my life—once when I lost a lawsuit and once when I won it."

The growing distrust of our formal legal machinery, the spread among our citizenry of a suspicion that justice is breaking down—all this has strengthened the determination of business to settle its own quarrels in a prompt and businesslike fashion. Appeals, motions for new trials, all the apparatus for procrastination familiar to lawyers have become distasteful to the real rulers of America, her business men.

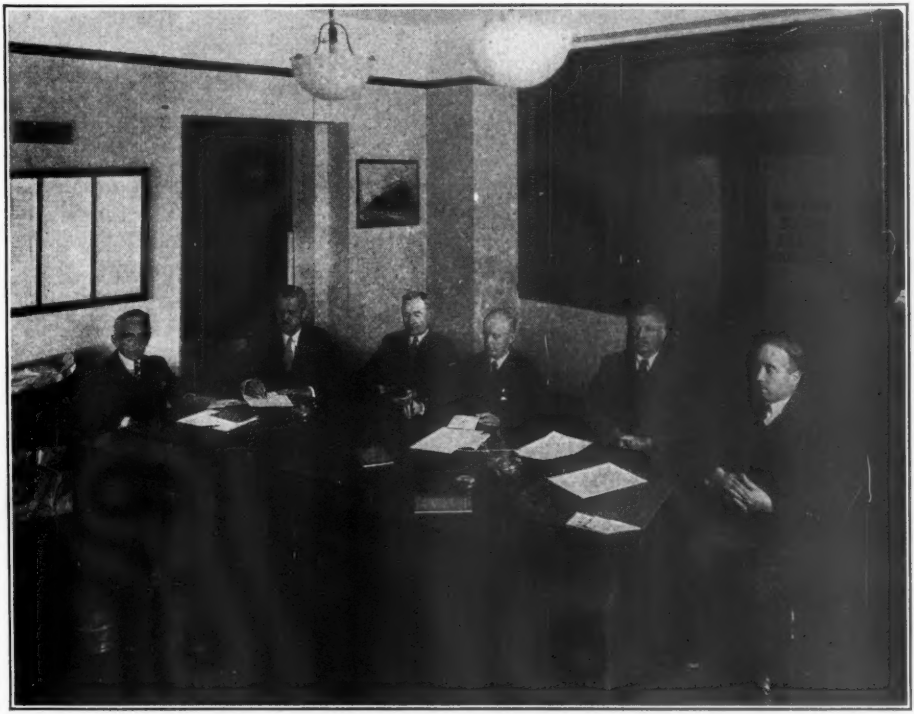
One wonders what may happen to the lawyers if all our people come to realize how much litigation may be avoided by a little reliance on common sense and good faith. How potent are these traits when exercised, especially the latter! How much it strengthens our confidence in the whole human race to learn that not one case in ten thousand settled by commercial arbitration is ever appealed or sent to court for legal enforcement! The parties to a dispute agree in advance to accept the decision of arbitrators they have selected, and in 9,999 cases out of 10,000 they keep their promise to each other without benefit of bailiff or constable. Here is government by the people indeed!

It is impossible to estimate in dollars and cents the great saving that American business now gains through arbitration. In the motion-picture business alone, in-

vestments running into hundreds of millions of dollars are protected by the thirty-six boards of arbitration that are maintained by the silver-screen magnates of this country to solve the issues arising among themselves. It is where a question of fact concerning a right to property is concerned that this method is most successful; and one cannot calculate the worth of the property involved in the silk, cotton, clothing, leather, wool, food, fuel, fur, grain, hay, rubber, lumber, and a dozen other fundamental industries, all of which protect foundations of good will and credit through the use of commercial arbitrations.

Commercial arbitration should not be confused with political arbitration or industrial arbitration, which is concerned with the settlement of disputes between capital and labor. Remember, moreover, that commercial arbitration is sharply distinguished from commercial mediation or conciliation. The commonest form of commercial mediation is where a third party offers his services as peacemaker to two business men that he sees in a deadlock. Mediation is informal, and the mediator may talk with either party without the other's being present. It might be said that mediation is merely bargaining with the aid of a supposedly disinterested prompter. For this reason mediation generally ends in a compromise. Finally, the outcome of mediation is not enforceable in court, except as the result of a separate suit based on the findings of the mediator.

On the other hand, a prerequisite condition of arbitration is that both parties to the dispute shall agree on the arbitrator and ask him to judge the case on its merits. Arbitration is formal; the arbitrator does not talk with one party except in the presence of the other. Arbitration is not concerned with bargaining but with the attainment of justice. Consequently, it seldom ends in a compromise. Lastly and



"MANY INDUSTRIES HAVE ALREADY SET UP THEIR OWN ARBITRATION TRIBUNALS"
The Arbitration Committee of the American Spice Trade Association, which has used arbitration for twenty years, considers a case. The president, B. H. Old (left), presides.

LUCIUS R. EASTMAN

President of the American Arbitration Association and one of the two American members of the Economic Committee of the League of Nations.

most important, in most of our states arbitration is recognized as having just as much validity as a court judgment.

In addition to the Federal statute providing for arbitration there are modern laws facilitating the maintenance of commercial peace by this means in New York, New Jersey, Massachusetts, Oregon, Pennsylvania, California, and Louisiana. But even in a number of other states that have not yet adopted the most modern type of legislation on this subject, an arbitration award may be taken into court and confirmed, with judgment entered therein. And note that all the elaborate pleadings and vexatious delays of ordinary litigations are avoided. Only the convenience of the parties to the dispute needs to be considered, whereas in ordinary lawsuits there are usually annoying and expensive delays. These are due not only to the congestion of our court calendars but also to the pardonable ignorance of juries when technical matters are the subject of dispute. On the other hand, the winner of a favorable arbitration award is in just as strong a position as if he had won a lawsuit, and the decision has cost him much less time and money.

Commercial arbitration has a long history. This is obviously so, since it is based on the willingness of disputants to submit their grievances to judges whom they themselves select and since getting out of a conflict without violence is the basis of all rudimentary systems of justice. There is evidence that as early as 350 B. C. the Athenians had a system of arbitration closely resembling that in use in the United States to-day. The Romans, too, used such methods from 450 B. C. to 30 A. D. Often when two Roman traders got into a dispute over a contract involving a deal in wine, olives, or what not, the judge merely determined the law to be applied and then

turned the case over to an arbitrator who investigated the facts and pronounced judgment upon them.

Through the Dark Ages of mediæval Europe, arbitration seems to have lapsed into the desuetude that overtook other graces and benefits of civilization. But as we might have expected, the merchants and navigators whose activities enriched the trading cities of northern Europe in the Hanseatic League revived commercial arbitration. For then, as now, it was the business man and not the lawyer who was interested in the quick settlement of economic disputes.

In France as early as 1250 there were official lists of persons engaged in different businesses that were made up "to expedite and conclude pleas." In 1560, one hundred of the foremost citizens of Paris banded together into a tribunal of commerce. This *Tribunal de Commerce* survived the French Revolution, which blew other courts to bits, and has continued in existence to this day.

The Law Merchant of England—the curious title of an ancient court—had its origin in the fair and market towns. Traders' disputes were settled there by Courts of Piepoudre [dusty feet], where merchants who had tramped in from the countryside could have their cases arbitrated. But in 1609 this speedy and effective system of justice while you wait suffered a setback—Chief Justice Coke held that agreements to arbitrate were not irrevocable. This meant that a party to such an agreement, finding his own claims insufficient and for this or other reasons knowing that the verdict would be against him, could break his agreement and refuse to arbitrate. His opponent then had no recourse other than to institute a long, tedious, and expensive suit in an established court before a possibly ignorant jury, which might well fail to recognize the justice of his claims. It was not until 1889 that a law was passed that made a submission to arbitration irrevocable. British business men, with customary shrewdness, quickly took advantage of this privilege, and to-day it is their usual method of adjusting differences.

In the United States progress has been

FELIX M. WARBURG
Chairman of the Board of Directors of the American Arbitration Association.

slower. Despite our much-vaunted progressiveness and initiative, the attention of our business men has been devoted mainly to manufacturing and marketing. We have lagged way behind England and the Continent in the adjustment of trade disputes. In England, for example, a large number of commercial cases never come into court. This is especially true of the vast wholesale trades that give English ports their position in the sea-borne trade of the world. There is a well-confirmed tradition that even though there be no written contract covering a particular dispute, it shall be submitted to arbitration. Yet legal opposition and hidebound tradition had to be overcome before this sane method could be established. Judges, juries, and lawyers had to be considered and conciliated. Litigation was their livelihood. The habit of court procedure was strong in people, and consequently spasmodic attempts to have existing statutes revised met with slight support.

Finally, however, the powerful state of New York woke up. She had always been the leader in this movement, for in 1768 a Chamber of Commerce was established in what is now the City of New York. One of the purposes of this organization was to settle disagreements between merchants of the town. During the Revolution, when the English courts were discredited and before the establishment of proper American courts, most of the controversies of the citizens were handled by this chamber. But for a long while after the Revolution the advantage of this privilege was ignored, and for nearly a century trade disputes were carried to the civil courts.

Not until 1874 did the people of New York realize that their methods of handling trade quarrels were not only extravagant but archaic. In that year the state recognized the arbitration policy and facilities of the Chamber of Commerce, which had not ceased entirely to function. A law was enacted giving the Governor of the state power to appoint an arbitrator for this court, as well as the official clerk. No provision was made for the enforcement of decisions, but even with this handicap the court was able to carry on.

As time passed the attitude toward arbitral methods became more enlightened. Trade associations increased in number and power. These, by establishing tribunals for the adjustment of disputes between their members, demonstrated the value of the arbitral system; and in 1911 the first efficient, organized effort was made to arouse general interest in a comprehensive program for enforceable arbitration.

Each year the courts had become more congested. Additional judges and increased facilities only added to the taxpayer's expense and exposed the inadequacy of the system. We are all vitally interested in that which affects our pocketbooks, so the fact that time and money might be saved had a potent appeal. We also like to feel that justice, in theory at least, consists in judgment by our peers; and the arbitral method certainly realizes that ideal more nearly than any judgment by a hit-or-miss jury.

The education of the public was developed along these lines, and in 1920 New York again took the lead and amended her statutes. This time she made a thorough job of it. The forms to be used in submitting disputes to arbitration were fixed. The clause that either party to a dispute might withdraw at any time before the award was made was revoked. Submission to arbitration clauses in a contract was made enforceable and irrevocable. Furthermore, an agreement to arbitrate a future dispute was made valid. Under these statutes an award may be enforced in a summary manner. All that is needed is to present to a court the agreement to arbitrate and the arbitrator's award, and on motion of an attorney the court confirms the decision.

This radical legislation made a definite break with legal tradition and gave much-needed impetus to the cause in other states and in Congress. But, though the national leaders were greatly impressed, not until 1925 did they feel moved to act. In that year Congress passed a bill to bring Federal arbitration in harmony with this New York action, including maritime cases as well as interstate disputes. The American

Bar Association states that this was the most valuable piece of commercial legislation in a quarter of a century.

The endorsement of the government should silence if it does not convince those doubting Thomases, in whom sentiment is stronger than reason, who see in this movement the downfall of the jury system and the toppling over of all our cherished institutions. They fail to note that twelve men equipped with good intentions in lieu of exact knowledge cannot be so efficacious in commercial cases as two or three arbitrators possessed of precise knowledge of the commodity in question.

Could a jury composed of a laundryman, an automobile salesman, a carpenter, or what not, be expected to decide intelligently on the merits of a case involving, let us say, the quality of a piece of silk or linen? To be sure, both sides could call experts to explain their contentions to this mixed jury and to impart some knowledge of the highly specialized product in question. Eventually a decision must be given, which may or may not be just.

Figure the cost in time and money of this method as compared with the handling of such a case by arbitration. A pertinent illustration is that of the silk manufacturer who sent several pieces of silk to be cross-dyed, the design to be a light background with a large check. He later refused to accept the goods, claiming that the background was so dark that the cloth was unmarketable. Two silk merchants and the vice-president of a dye works were agreed upon as arbitrators. After hearing the evidence they examined the goods and found it was impossible to dye the material as ordered. But they also found that part of the silk could be redyed in popular combinations. They awarded the manufacturer an allowance of 50 cents a yard and directed that the goods be redyed without charge.

Despite the fact that case after case might be quoted to show the economic and ethical advantages of arbitration, the objection has been made that a "state within a state" might be evolved; that a business-legal bureaucracy might develop that would conflict with the logical functions of the commonwealth. These fears are refuted by the fact that modern arbitration methods are legalized. Their judgments are confirmed by the courts. They are sanctioned by the states and by the national government.

Though men are thinking more and more in terms of organization and good will, the millenium has not arrived. The future of arbitration lies before it. There are still about thirty states in this country hampered with out-of-date, inadequate commercial laws. It is a man-sized job to overcome inertia and raise standards, but such organizations as the American Arbitration Association, the several Chambers of Commerce, and the various great trade associations are carrying on a nation-wide campaign of education along these lines. They are working for the enactment of efficient arbitration laws by the legislatures of every state in the Union. Not only for its economic value is this being done but also to help develop the "will to peace" throughout the land. When this has been accomplished we shall have made great strides in this country toward that brotherhood of man that was the cherished dream of Abraham Lincoln.

THE WORKSHOP

THE SERIES of three articles on the pertinent question "What's the Matter with Mexico?" by HENRY KITTREDGE NORTON, has aroused great interest, and below we print two letters that we have received from readers. The first comes from an American resident in the State of Sinaloa.

To the Editor, WORLD'S WORK.

Sir: Mr. Norton avoids the common errors that American writers on Mexican affairs usually commit, but he fails to emphasize duly two elements of the situation. In the first place, a fundamental shortcoming of the Mexican character lies in the inability to form associations for large scale commerce or manufacture. They make excellent clerks, cashiers, salesmen, and mechanics, but throughout the country the business executives are foreigners. After the revolution an attempt was made to displace completely the American employees, who up to that time had held all important places on the railroads, but there still remain a few division superintendents and higher functionaries, and, if the railroads go back to private ownership and operation, the number will probably increase.

A few miles from this place is a town called El Valle, where crude pottery has been made for centuries. Each family has its own kiln and when a cartload of finished ware has accumulated they go through the country peddling it from town to town and house to house. No Rockefeller or Harriman has yet arisen to consolidate the whole industry into one unit, with the resulting economies.

Another matter to which Mr. Norton failed to call attention is immigration, which is bound to become of increasing importance. The present population of Mexico is about 14 millions. The native races increase little, if any, and whatever increment of population comes is from the mixed races or recent immigration.

Now I consider it no exaggeration to say that the country can support 100 million people, so when the flood of immigration starts it will, in a few years, completely change the complexion of society. The Chinese, who have monopolized retail trade almost completely, are not liked, and exclusion laws are desired by many. If the coming immigration should be from the United States or northern Europe then the country will quickly approximate the position of the United States in commerce, industry, and culture. If the immigration is from Asia Minor, Sicily, or southern Spain, then there will be little change from existing conditions in a country governed by soldiers who consider it a milch cow to give them luxury in idleness.

The West Coast has in most directions greater natural resources than has California, and the changes that took place there between 1850 and 1900 may be repeated here in much less time, if a current of 100,000 American immigrants were to pour over the Sonora border each year.

The second letter, from a reader in Roswell, New Mexico, questions the truth of a statement on land tenure made by Mr. Norton.

To the Editor, WORLD'S WORK.

Sir: Mr. Norton says that at the close of the Porfirian régime (in Mexico) "The arable lands of the country had, almost in their entirety, come into the hands of less than a thousand owners or *hacendados* and into the possession of the Church. The vast mass of the people were left without land."

This statement is so preposterous and ridiculous as to merit no attention were it not put forward as an excuse and justification for the anarchic reign of murder and pillage that has prevailed in that unfortunate country since Washington saw fit to underwrite the socialist revolution. There were hundreds of thousands of landowners in addition to millions of Indians still occupying lands in common. And there were, and still are, many millions of acres of good lands waiting settlement.

The statement regarding the Church owning

land is equally absurd, for it is no secret that the Church has been outlawed since 1857 and so not permitted to own a square foot of land. Previous to 1857 the real estate charged to the Church really belonged to the endowments of the numerous educational and beneficent institutions with which the country was blessed. These endowments excited the greed of the politicians, who finally pillaged them and extinguished the schools, hospitals, and asylums supported by them. To justify their thievery the politicians invented the calumnies still current.

Why did the decent people of Mexico permit this? Because the United States Government used its armed forces to protect the pillagers. Consult the records of Buchanan and Wilson.

EBER COLE BYAM.

A reader in Crawfordsville, Indiana, thinks that MARK SULLIVAN'S article entitled "The Campaign Warms Up," in the October issue, "is rather misleading and does not cover an important phase of nullification"—which he explains below.

To the Editor, WORLD'S WORK.

Sir: Mark Sullivan seems to think that the prohibition amendment is going to "stay put." He seems to have entirely overlooked the possibilities in the Supreme Court of the United States. The Supreme Court is composed of mere men who carry their fixed opinions with them and in this case the majority were dry.

As in the next four years some of that body will die or resign the President can select as their successors men who are in accord with himself, and with only a majority of one in his favor the Eighteenth Amendment can be thrown into the discard and in a week's time the corner saloon can be reëstablished.

The Indiana State Supreme Court furnishes an example of their power to nullify the people's wishes. It is 3 to 2 wet, and all decisions concerning liquor violations are decided in that ratio where the search and seizure law is concerned, making it almost impossible to convict for lack of what they consider legal evidence—this in spite of the fact that it is contrary to the rules as applied by the United States courts. The change of one judge from a wet to a dry would restore the old line of decisions.

CHAS. CADWALLADER.

From an engineer in Berkeley, California, comes this dissent from RICHARD OLNEY'S conclusions in his article "Shall We Revise the War Debts," in our October issue.

To the Editor, WORLD'S WORK.

Sir: Mr. Olney makes the astounding statement that "The direct audited losses of the late war were about $200,000,000,000, exceeding the total wealth even of the United States before the World War."

"Wealth consists of all consumable utilities which require labor for their production and can be appropriated and exchanged," according to the "Encyclopædia Britannica," and the World Almanac, 1928, records the the wealth of nations as follows:

	1912	1922
Great Britain	$ 75,000,000,000	$130,000,000,000
France	58,500,000,000	60,000,000,000
Italy	22,000,000,000	25,000,000,000
Belgium	6,000,000,000	12,000,000,000
Allies Total	$161,500,000,000	$227,000,000,000
United States	$186,000,000,000	$320,000,000,000

From these figures it is evident that, notwithstanding the "audited losses" of $200,000,000,000 worth of wealth, the Allies (on whom the losses fell) have increased enormously in wealth. And, as a final result, not only were the losses recouped but a huge profit accrued—amounting to sixty or seventy billion dollars. So, instead of being a financially losing and destructive enterprise, it would seem that war is profitable and productive.

Mr. Olney agrees that "we should deal with a debtor nation according to its 'capacity to pay.'" He shows that the United States has already cancelled, on the average, 50 per cent. of the war debts and then says: "I should cancel 30 per cent. more of such debts" and "take into consideration only those loans that were contracted after the armistice was signed."

I find it difficult to follow Mr. Olney's reasoning, for authoritative figures show that the European Allies have far greater "capacity to pay" than they had before the war, and their total debts to the United States are less than one sixth of their increase in wealth since 1914.

WILLIAM H. SMITH.

The Manager of the Protective Department of the Illinois Bankers Association writes us that HOWARD MCLELLAN'S

article, "Corn Belt Vigilantes," in the October issue, "is particularly interesting to me because I am the Saunders that is mentioned." This comment follows.

To the Editor, WORLD'S WORK.

Sir: The way the organization was started is, briefly, as follows: When bank robbery became so prevalent in Iowa in June, 1924, Governor Harding assigned six Special Agents and myself to the Iowa Bankers Association to work under the direction of Secretary Warner. I was sent to Greenville, in Clay County, one Friday evening by Mr. Warner because the bank at that point had been burglarized, and upon my arrival there Sunday morning I received a telegram from Mr. Warner stating the bank at Wallingford, about forty miles away, had been burglarized on Saturday night. Upon my arrival at Wallingford I received another telegram to go to Emogene, in the southwestern part of the state, as the bank there had been burglarized.

I hurried to Emogene and after looking over the bank there I boarded a train for Council Bluffs and was handed a telegram from Mr. Warner by the conductor stating the bank at Pleasanton in Decatur County had been burglarized. As I entered the bank at Pleasanton the telephone was ringing and it was Mr. Warner calling me, stating the bank at Grand River, in the same county, had been burglarized the night before.

While I was driving from Pleasanton to Grand River I said to the sheriff, "These bank robbers are having more fun with me than any one in the world. Here I am running about over this state with scarcely time to look these banks over and not apprehending anybody, so we must try some other plan."

Upon arriving at Grand River I called Mr. Warner and told him I was going to call all the bankers in the county to meet that night, which I did. Every banker was present and they decided to offer $1,000 reward for the robbers of the Pleasanton and Grand River banks and also for any future jobs.

The next morning I returned to Des Moines and Mr. Warner and I went over to Governor Harding's office, where we had a conference with him, and it was at that conference that he suggested the Vigilante idea and ordered me to coöperate with Mr. Warner in building a Vigilante Unit in every town in Iowa that had a bank. He said to me, "Now I mean to stop these bank robberies and burglaries in this state and I want this organization to amount to something and I will deputize every citizen that will act as a Vigilante as a Special Agent of the State of Iowa with authority coextensive with the state."

R. C. SAUNDERS.

The next two letters contain comment on statements made by Warden LAWES in his articles in this magazine. The first letter is from Colorado Springs, Colorado.

To the Editor, WORLD'S WORK.

Sir: The argument that capital punishment has not stopped murder has been worn threadbare by sentimentalists. Prisons have not stopped stealing. So why not tear our prisons down? Law has not prevented crime. So why not abolish law and establish an anarchy?

Capital punishment is not for the purpose of revenge, but to remove a menace to society. The mentally unbalanced murderer is more of a menace to society than the one of sound mind and if the benefit of doubt is to be given either, it should be given the one who has the mental capacity to reform.

ARTHUR E. WALKER.

A mining engineer in Hilger, Montana, points to Warden Lawes's criticism of the American Bar.

To the Editor, WORLD'S WORK.

Sir: In your June Number, Lewis Lawes says, "Thus it happens that it is seldom that a person who is able to have eminent defense attorneys is convicted of murder in the first degree, and very rare indeed that such a person is executed. Incidentally, a large number of those who are executed were too poor to hire a lawyer, counsel being appointed for them by the state."

Bluntly, if you have the money, you need have no fear of the law—surely a most drastic arraignment of our judiciary and the legal profession in general.

The legal profession has degenerated from the high office of interpreting the law to that of obstructing it. A large proportion of our legislators are of the legal profession, and we have looked to them for the rehabilitation of our judicial system. Our hopes have proven vain. The present indifferent attitude of the American Bar is little less than criminal, a disgrace to their noble profession.

FRANK B. BRYANT.

When Vose First Made Pianos

It was in the romantic days of 1851, when Millard Fillmore was President of the United States, when the California gold fever was still at its height, that the first Vose Piano was built. Even for that aesthetic age it was a wonderful instrument, a masterpiece. That Piano is still in use, retaining all of its original sweet quality of tone.

The "Florentine Grand"

During the seventy-seven years which have elapsed the Vose family, through three generations, has been still further perfecting the marvelous musical instrument which today is acclaimed by music lovers the world over as the Piano with a living soul of tonal beauty.

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There are 5000 workers on the staffs of the American Telephone and Telegraph Company and the Bell Laboratories whose sole occupation is to develop constantly improving methods and equipment for the 350,000 employees of the Bell System to use in serving the public. The results of the efforts are evident, not only in the extension of telephone service across the Atlantic, but in the constantly improving local and long distance service at home.

The very nature of the telephone business necessitates a single interconnected system. The American Telephone and Telegraph Company accepts its responsibility for a nationwide telephone service as a public trust.

It is fundamental in the policy of the Company that all earnings after regular dividends and a surplus for financial security be used to give more and better service to the public.

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Let it blow!

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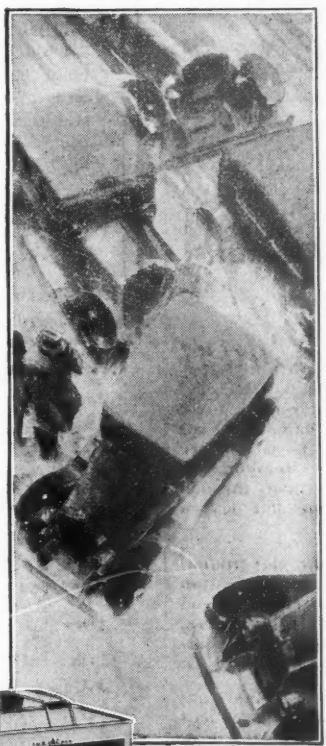
Eveready Prestone has been a tremendous success since its announcement last year. It has been used by thousands of motorists, by bus and truck fleet operators, automobile manufacturers and aviators, with complete satisfaction.

Eveready Prestone is a *pure, undiluted product*—not a solution or a mixture. Although it costs more initially, it is a most economical investment because of its lasting qualities, and because one to two gallons—depending upon radiator capacity—is sufficient to protect a car all winter.

Make your car safe today. Get a supply of Eveready Prestone and forget about freezing hazards.



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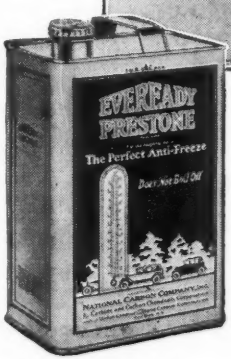

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Eveready Prestone does not contain any alcohol or glycerine.

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MUSIC AND RADIO

Fine Holiday Music In Old Forms and New

FINE music in one form or another plays an increasing part in home life and public entertainment with the approach of the Christmas season.

Throughout the coming months it promises to gladden and enrich the lives of greater numbers than ever before.

Not only are the facilities for enjoying fine music within the reach of greater multitudes but the desire among all classes to share its pleasures and benefits are greater than ever before.

The evidence is abundant that music in its finer forms is steadily advancing its appeal to the general public and gaining recruits from young and old in all walks of life.

Volumes could be written of the various influences contributing both directly and indirectly to the broadening and deepening of this appeal.

The radio is but one of these and its general use of such comparatively recent origin that no one as yet can fully estimate the extent of its influence, though there can be little doubt it has been great.

While there is probably no one thing in the world about which every one will share the same opinion, it is generally agreed that the degree of perfection that has been reached both in the art of broadcasting fine music and in the facilities for its reception within the home has placed the radio on a plane of great service and usefulness in the music field.

At a cost of millions of dollars the best music, by leading symphony orchestras, singers and instrumentalists of exceptional standing is being broadcast to every part of the country and into the humblest of homes where fine music in its more expensive forms may be beyond reach.

It would require pages to tell of the splendid music programs that will be broadcast on a national scale in these coming weeks.

While the radio has been perfecting and expanding its service the same has been true of the phonograph. Not only in the instrument itself but in the methods of recording fine music there have been wonderful results.

The phonograph of today is not only a great popular favorite but has entered a new era among discriminating music lovers the country over.

In its improved form it is not only providing delightful entertainment in many thousands of homes but is doing much within these homes to increase the love and appreciation of fine music.

It is, however, in the modern reproducing piano that music in recorded form achieves its highest artistic success. In the marvelous reproduction of playing by master artists on this oldest and finest of our musical instruments perfection itself has been reached.

For more than two centuries the piano has been regarded as the musical instrument of pre-eminent value yet its wonderful possibilities as a reproducing instrument are being revealed to thousands for the first time.

As an instrument for self-expression and enjoyment its superior advantages have long been recognized and have richly repaid even the least gifted of players.

And now in these later years the piano combines to a superlative degree for those who so desire improved facilities for such self-expression and the great privilege of enjoying without effort the work of great artists at their very best, and in one's own home.